



SATURDAY, OCTOBER 30, 1875.

Hall's Safety Switch Signal.

We have received a description of a method of switch protection which has recently been applied by the Hall Railway Signal Company upon one of the Boston lines at a point of great danger, with the promise of excellent practical results.

In the above diagram it will be seen that the switch is located at the end of a curve. Directly in front is an overhead bridge which completely obstructs the view until the train has reached a point within a few rods of the switch. The signal is placed some five hundred feet from the bridge *g*. This signal, in its normal condition is always set at danger, showing a red target. Track instrument No. 1 is placed 2,000 feet from the signal. Now, a train approaching from the left, as shown by the arrow, should raise the target from danger to safety by contact of its wheels with the lever of track instrument No. 1, by which the electric circuit is completed, which raises the signal *A*. This it will do, provided the main line is clear. After passing the switch, the train will operate track instrument No. 2, which is placed just beyond it. The purpose of this instrument is to let down the signal, previously raised to safety, to its original position of danger.

These will be the effects produced when the main line is clear; but in case the switch is misplaced, the passage of the train over track instrument No. 1 will produce no effect upon the signal, and it will remain set at danger to warn enginemen of the condition of the switch, and in no case can it be raised to safety while the switch is turned from the main line.

Those who are familiar with the operation of the Hall signals understand that they are worked by electro-magnetism, which vitalizes the magnets attached to the mechanism which raises or lets down the signals, the train operating them automatically by contact of its wheels with the levers of the track instruments. Now the electric circuit from track instrument No. 1 (which should raise the signal) passes through a cut-off or circuit-breaker in an instrument connected with the switch, and when the switch is set for the main line, this cut-off is closed, and the circuit is complete, which enables the train to raise the signal to safety, while the act of throwing the switch from the main line opens the cut-off and breaks the circuit, thereby rendering track instrument No. 1 inoperative, and in consequence the train is blocked by the immovable red target.

Should the switch be turned from the main line after the train has passed track instrument No. 1, then the signal would show safety and give no warning to the engineman of the open switch, and a false signal would lure him to danger.

To provide against such an occurrence, the movement of the switch from the main line completes a second electric circuit within the switch instrument, which serves to let down the signal to danger even after the train has passed the track instrument. For still further security, a bell is rung at the switch by an electric circuit from the signal, which is completed whenever the signal is raised to safety; in this manner the man at the switch receives notice of the approach and locality of a train to caution him against moving the switch until after it has passed. Thus a train is protected from all possible hazard from the open switch, and safety is assured to the engineman when the line is clear by the disappearance of the danger signal from sight; furthermore, the normal condition of that signal being danger (as has been shown), from which it can only be changed by the proper action of the circuits and instruments, any derangement of them could only result in blocking the train until the difficulty was ascertained.

Railroad Passenger Business.

[An address read before the Semi-annual Convention of the General Passenger and Ticket Agents' Association in March, 1875, by Samuel Powell, General Ticket Agent of the Chicago, Burlington & Quincy Railroads, Secretary of the Association.]

It is a theme as broad and fertile as our Western prairies, and as prolific of topics, as they are of crops, under good and intelligent cultivation.

Who among us at a glance fully comprehends the rapid growth and extent of passenger transportation? It is only when the mind reverts to some old picture of the early trains, or we look back to other times, or more particularly when we chance to get into some old coach, with its small windows and low roof, that we feel the contrast, and realize fully the conveniences and comforts of to-day over those of a few years ago.

It is but thirty or forty years since a train, consisting of an engine and three passenger cars (many of you have seen its picture, being quite common in railroad offices), was run on the road west of Albany, now a part of the great New York Central. It is a crude picture, but not less so than the train. The motive power was a rude affair, which in these days of grand and powerful machinery would scarcely do service in a shingle mill of the primeval forest. We can smile as we look at the barrels of wood, standing on the platform of the wagon next the engine, as well as the other appurtenances connected with it, and contrast that simple affair with a locomotive of the present day. The passenger cars need not be depicted, for each has in mind's eye the exact form and contour of the whole

train far better than can be put on paper, except by an artist. It is said that among the passengers of that noted train—and it was noted to the extent of being thought worthy of preservation as a picture—were some men who have since made for themselves a national reputation, and are still among the living. Thurlow Weed is said to be one of them, and yet he is in active life.

In the *Railroad Gazette*, a few months since, was a picture of one of the first engines run on the Baltimore & Ohio Railroad, some forty years ago. This engine, unlike that of the New York Central, had an upright boiler. Two gentlemen now connected with the Illinois Central Railroad, in active duty, ran one of those engines between Baltimore and Washington, as engineer and fireman.

Attention has been called to these pictures, simply for the purpose of more forcibly drawing the contrast, which each one has formed in his own mind, of the rapid strides that have been made in these few years in the way of "speed, comfort and safety" to the traveling public. It seems hardly possible that as much will be accomplished in the next thirty years, in the way of progress, as has been in the last thirty, but I think no one would care to hazard the opinion, that those who live to see that time will not also see very great changes, even from the present. We cannot readily see wherein great improvements can be made, as we are inclined to the opinion that the acme of invention has been nearly reached; that the ladder of improvement has been nearly climbed; that nothing further is needed in that direction; that "necessity is no longer the mother of invention," our wants and wishes being met by what we already have. This is undoubtedly true, as far as we are able to see, but the fertile mind of the inventor is continually at work, solving the problem, that *progression* is the order of the day, and as a consequence, every little while we see something brought out that fills a hitherto vacant space, or is an advance on the old method, and thus we go on from improvement to improvement so gradually, as to us scarcely noticeable. The traveler of 1800, however, may be able to see wherein the appliances for the aforesaid "speed, comfort and safety" of that period are beyond those of 1875, as we of 1875 can see that those of this day are beyond those of 1850.

We meet together in association twice each year, mainly for the purpose of revising and correcting our schedule of rates, although there are many other things acted upon from time to time that greatly contribute to the general good. The schedule of rates has become almost absolutely necessary, from the fact that the lines of railroad, intersecting as they do each other so frequently all over the country, and especially in the middle portion, renders it extremely difficult for any one general ticket agent to make up a list of rates, from any series

its usual number of cars, an additional one can be added at a very low price, and that the railroad company is benefited to the extent of the amount received for the use of that car, even though it may have been hauled for a rate that is less than the average cost of a car per mile.

This may be true as regards one car; but carry out the sequence, and apply it to any number of cars, will the result justify any railroad company in carrying out the principle thus laid down or claimed?

Because an additional car or cars can be hauled without incurring any seeming additional expense, the benefit of the low rate thereby accruing to a particular class or party, it can be proven, by the same false reasoning, that if all parties using the trains of a railroad company were allowed the same special privileges—and it cannot be denied but that all are equally entitled to them—the net results of that company would be very seriously impaired.

I will grant, for the sake of the argument, that a railroad company may make concessions to a party of people, whether large or small, and thus gain a temporary advantage over a competitor, but I am prepared to sustain the other side of the argument, that the "game was not worth the powder," for the simple reason that on the next opportunity the aggressor will go beyond the aggressor, and the consequence is, stability of rates is out of the question.

I think it may safely be said that no one can be so conceited as to believe that he can monopolize this method of over-reaching a competitor, and thus secure for his company any considerable advantage. It is sure to react—the gain of to-day being counterbalanced by loss on the morrow.

This has been carried to a great extent by the readiness of railroad officials to cater to the wishes and solicitations of itinerant parties—parties who wish to use a line of road but once—especially those emigrating to a section of country far removed from the line that gives the reduction, it being generally the case that the road which ultimately locates the emigrant on its line makes no considerable reduction from regular rates.

So great an evil has this method of competition become, as you all well know, that if a small company of people, say five or ten, wish transportation to a certain point, it is the practice, the common practice, to go from one to another of the roads in competition, and solicit a reduction from the regular and agreed rates, and I am sorry to say that it is a rare exception, owing to the weakness exhibited on the part of railroad officials, that they do not succeed in their endeavor to a greater or less extent. The practice of giving reductions to this class of people, *first-class emigrants*, is an outrage on the regular patrons of a road, who assume that the rates charged in the regular ticket offices are standard, and are not deviated from, and therefore deal directly and without question with those ticket offices. If any class of people are entitled to special rates it is that class who are the regular and habitual patrons of a road, and not that class who are generally the recipients, and therefore the practice cannot be defended on any principle of fair dealing and honesty of purpose.

Could any general ticket or passenger agent take out a patent for this kind of illegitimate practice, there might be some slight shadow of sense in it; but when the field is open to any one who may be disposed to enter the lists, it has the appearance of being the height of folly, and one that can and should be brought to a speedy termination.

Every Spring and Fall we see the same maneuvering being practiced, and if it is but known that a party are to emigrate from a certain section, those

of points to other points, and have them agree with a like list, to and from the same points, made up by any of his associates. By the means of the schedule made up in convention, at which all can be present, we are able to determine and agree upon the rates to and from the principal points in the country, and thus have common rates, at which tickets are sold, being alike in contrary directions. Without the schedule the chances are, that while the rate between two certain points would be at one figure for one direction, another rate would obtain in a contrary direction. I do not pretend to say that the same result could not be accomplished without the semi-annual meetings of the Association, but I do say that with them our labors in this respect are very much simplified, and the results more equal and reliable.

*Q*n the matter of rates we have a common interest and work harmoniously, because it is said that figures will not lie—unless they are set down wrong. In making up our rates, being governed mainly by the local tariffs of our respective roads, we get along very smoothly, harmonizing the conflicting interests on the basis of the "short line," whether of distance or of rates, as the case may be. This mutual understanding is vastly more perfect of late years than formerly, and is mainly attributable to the smoothing influence of personal contact, which could not have been had as a whole, except for the meetings of the Association. It has been remarked, whether in sober earnest or not I am not sure, "that our meetings serve the purpose of what is called a good time more than anything else;" but am I not correct in saying that for those who take a lively interest in making up the rates, the three or four days they are engaged on them are as laborious as any work they do in the interim of the meetings? It is no boy's play to sit for six or eight hours a day making rates, and if any one is disposed to doubt this, let him but try it, and disabuse his mind of the delusion.

There are points, however, coming within the personal jurisdiction of each member, in which there is not that vein of harmony, that unity of purpose among us there should be. Chief among these points is the want of unity and high moral action, in the manner of conducting what is generally known as the outside work.

The subject that I shall principally attempt to bring before you is the elevation of the standard under which we claim to be enlisted—the best means for making the best results for each of our roads in this branch of the business.

In treating this subject it will be necessary to use some plain words, and which I believe to be truth; but, I purpose to beg the question, and disclaim any imputation of being deeper in the mysteries that pertain to this particular branch of the work than any one else, and do not draw from my personal action to any great extent. I will assume at the outset, that by the abolition of all unfair means for the procurement of competitive business, we shall be striking at the root of the ruinous competition that has been indulged in to a greater or less extent all over the country; that, for the sake of a few passengers or a few dollars temporarily gained, the passenger business has been sadly demoralized, and the net results from competitive business reduced to a very low percentage as compared with the cost of doing the same.

It is often claimed that when a passenger train is made up to



HALL'S SAFETY SWITCH SIGNAL.

you will find the agents of the road in competition, bantering and dickered away the substance, until but the shadow remains. Would these same men confine their efforts to straight and legitimate travel, there is not a question but that all would be better off. Reductions of the kind mentioned do not in any way add to the number of passengers to be transported, and hence it follows that passenger receipts are diminished precisely the amount given to individuals, who take the time and trouble to go from one to another until they find some one who, for fear that his road may not get the few dollars this person has part with for the transportation of himself and family, makes a special rate, and then thinks he has done a wonderful thing. Individuals are not to be blamed for seeking special privileges and special rates. We all like them, but the railroad companies are wholly responsible for this fast and loose way of transacting their business. My friend makes a concession for this party, and I for that. He will not allow me the monopoly, neither will I allow it to him; and if any one will tell wherein either of us has made anything, he will confer on the fraternity at large an obligation that will not soon be forgotten. My friend, advocate and promulgator of special rates, here is an opportunity for you to achieve a name as well as fame.

I am well assured that if an honest and persistent effort was made by those in authority to correct this large and growing evil, a healthy and beneficial result to the finances of the passenger department would certainly follow. It is a trite remark that the man who causes two blades of grass to grow where but one grew before is a philanthropist and benefactor of his race; but what can be said in defense of a practice which, if persistently and industriously followed, does not increase by one the number of passengers to be transported, but does diminish the receipts to be obtained from those who are to be transported, and who otherwise would pay the regular current rates?

Purify the source of the streams, permit nothing impure to enter them as they flow on, and the ocean to which they are tending will also be free from impurity. So with us; each can regulate his course so as to correct this evil. Permit no irregularities that will not stand the closest scrutiny, and the passenger business will be free from much that now renders it perplexing. The whole matter lies within the compass and jurisdiction of those of our Association, and if all were imbued with an honest endeavor to maintain the right without any purpose of underhand work, a revolution would inevitably succeed that would be beneficial to all interested.

Under the present state of things, this company will to-day get the start of that company, but as sure as the sun will rise on the morrow, the one that over-reached his neighbor to-day, and thereby secured what is called a gain, will be met on the morrow by a corresponding action, that will in effect neutralize the benefit thought to be gained.

Do not be deceived in believing that you are doing a good work for your company by entering upon any course of action that requires a constant covering up, with the hope, and perhaps belief, that being more expert, or sharp, as some may call it, you have over-reached your competitor, secured a few passengers, and thereby a few dollars for your company. I cannot believe that the men in charge of our great corporations,

as presidents, general managers, or general superintendents, require or expect such service at our hands. They are men of too high personal and official honor and integrity to expect or demand it; and though they may wish at any deviation from the straight path when brought to their knowledge, I am confident that if the individual members of this Association will but take the matter in their own hands, and say, as for me, I will be honest, see that those under me are equally so, carry out faithfully and fully any and all agreements to the strict letter and intent, I say I am confident the managing officers would not wish it otherwise, and would help each one of us to the full extent of their power and position.

I know that some will say that this is all buncome; it cannot be done; I will be honest if my neighbor is; I do not wish to do a mean thing of my own accord, but am forced to it by the action of my competitor—and much more of the same sort, being only varied according to the temper and disposition of the doubter.

Hence lies the principal trouble for a reformation. Each one is not willing to believe his competitor honest, simply because if an opportunity presents itself whereby he can secure a temporary advantage, he does not hesitate to avail himself of it, believing that if his competitor has the chance he will do precisely as he himself is doing.

Is not this the true solution as well as the real cause of all the trouble? We are not honest ourselves, not strictly and totally so. It would not be prudent or true to assert that all are equally dishonest, for I do not believe this to be the case. There is a wide range of thought and feeling on this subject, there being leaders and followers in this as in all other branches of business. The transportation of passengers is not so essentially different from other kinds of business that we can afford to be indifferent to the lessons which may be derived from the pursuit of a legitimate mercantile life. We do not see a merchant—and by the term merchant, I mean one who fully understands his business, there being many who bear the name, but notoriously fail to observe it—whose capital being invested in his business, sells his merchandise simply for the purpose of increasing the volume of his sales, without regard to the profit or loss that may be incurred. True, he may in times of depression or an overstocked market materially reduce the price of some of his goods, even below the cost of the same, but this is within the scope of the true merchant. He thereby may relieve himself of possible indebtedness, saving in interest what he may lose in sales below cost, and does not seriously impair his capital.

In the transportation of passengers there can be no overstocked market, and therefore nothing is to be provided for in this respect. Times of depression and slackness will and do come, but if a reduction in rates will help us out of the difficulty, the reduction ought to be universal, and not to any particular class or individual. That local reductions may not be made, whereby a large number may be induced to visit a locality for a certain purpose, within a limited time, the financial interests of a company, being greatly benefited thereby, there is not the slightest doubt, but on the contrary, is generally accepted as true, and acted upon accordingly.

These benefits, besides inuring financially to the company, are given to the general patrons of a road, who more or less are in the use of the trains of that road at regular rates, and they are the ones to whom reductions belong of right (in case any are given) and not to those, who as said before, have occasion to use the road but once.

I presume that some will say that I, from my standpoint as the representative of a strong corporation, can take this position, and if those in competition with it, who are weaker, will adopt these virtuous measures, the company I represent will be largely the gainer, its reputation being well established. Let us see if all the benefit will accrue to the weaker party, provided he does not accept and act on this position.

All other things being equal, the passenger business will distribute itself quite as equitably under a tariff of reasonable rates as it will under one that is reduced. It is not to be supposed that I will rest easy under a cutting of rates to points which are as much mine as they are those of my competitor, without retaliating in some way, for what I am privileged to consider an invasion of my rights.

New lines of travel, and long lines of travel, are very apt to think that something of this kind is necessary in order to bring their routes more prominently before the public; but have they any surer that the old or shorter lines will not resort to like measures for the purpose of keeping their advantage? Assuredly not. The reputation of a railroad company, like that of an individual, is of too much value to be trifled with, and will be guarded in the one case quite as zealously as in the other, provided those in charge of the departments act from a sincere desire to promote the future, as well as the present welfare of their company. We know how easy it is for an individual to lose a respectable reputation. We see or hear of cases almost daily. In these times of extravagance and "haste to be rich," the rapidity with which fortunes have been made has led many to embark in enterprises that will not bear a strict examination, and failure is the general result. At least, we can more readily trace the results of failure than of success, from the fact that when an individual succeeds in a great undertaking, we are apt to consider him as fortunate, as one possessed of rare business tact, and do not look so closely into the ways and means by which it has been accomplished as we do when failure follows.

In connection with our positions as officers of railroads, there is as much occasion for cultivating a reputation for square and honest dealing as there is in any other department of a business life. A reputation for sobriety, truth and honesty is not to be lightly thought of. It is like the keel on which rests the superstructure of the ship. Without that is laid firm and true to the line, it is useless to build upon it, with the hope that the mistakes there made can be rectified as the work goes on. The foundation must be laid on correct principles, else all that is built upon it will of necessity be imperfect.

If what has been said in regard to honesty of purpose be true, how easy to remedy the whole evil. Purify, each for himself, his own dominion, and the whole body politic will be purified. This is no idle talk, if looked at correctly—not a dream of the fancy. I know some may smile at what may be called the innocence of my heart, but my impression is that if each will sound the depths of his heart, and give utterance to the sentiments he will find imbedded there, all will agree that I am not very much, if any, out of the way.

The only real obstacle in the way of putting these principles in operation is want of faith in each other; and yet why should there be any lack in this regard? We are working for a common interest, although the private interest of each may be diverse; still, when it can be seen that whatever is for the common interest is equally for the private interest of each, in the name of all that is reasonable, why cannot it be done? I firmly believe that no road, or individual, has gained anything in the long run by trying to over-reach.

Is it not better to elevate the standard of railroad morality, and initiate a day of better things, than to go on in the present way of depressing it and trailing it in the dust? It is too true that it bears the marks of many a dash and smear, but the time has not yet passed in which it may be made clean and beautiful, clear from the suspicion even of being else than it appears, the epitome of honor and integrity. Let each take his particular part, whether it be of high or low degree, and remove for himself as it needs. "Every heart knows its own bitterness," and each member knows just what is required in this respect that "order may come out of chaos," a consummation devoutly to be wished.

Contributions.

The New Charlotte Bridge.

Oswego, N. Y., Oct. 25, 1875.

To THE EDITOR OF THE RAILROAD GAZETTE:

The bridge across the Genesee River at Charlotte is completed. This is a double-track, two-truss drawbridge, from face to face of abutments 300 feet. The bridge is constructed to sustain a moving load of 2,500 lbs. per lineal foot, both arms loaded, or 3,000 lbs. one arm loaded: extreme panel load, 4,500 lbs. per lineal foot of track, with the usual factor for safety. It is worked by steam power. All parts fit very nicely, and in all respects it is a first-class wrought-iron bridge.

The substructure consists of one pier and two abutments of Chaumont limestone, which are built upon timber foundations, of 12×12 in. and 6×12 in. pieces, four feet thick for pier and two for abutments, well bolted together. This timber rests upon piles driven over 30 feet into the hard sand. The piles are cut off at bed of river, 24 feet below surface of water, by a circular saw attached to a vertical shaft driven by steam power. The masonry was laid in caissons of the usual form, the sides being detached from the timber bottom after completion of the work. The rest piers of this bridge are hemlock timber cribs filled with loose stone, the up-stream pier being protected by a sheathing of boiler plate. Between the rest piers and draw pier are three rows of piles 10 feet apart, braced at top with 6×8 in. braces, and tied with 3×12 in. oak plank. The outside rows are covered with 3×12 in. planks bolted to piles and reaching below low-water line. Heavy loose stone are thrown around all piers and abutments to prevent scouring.

Before the work was commenced, the river bottom was sounded to a depth of 85 feet below surface of water. Nothing was found but coarse sand. A common gas-pipe and force pump were used. Water being forced through the pipe kept the earth loosened about the bottom as it went down, rendering the progress easy and rapid.

The contractors for this work were the Delaware Bridge Company, Charles Macdonald, Engineer, for the superstructure; John Edwards, for the stone piers and foundation; and John Hunter & Co. for the timber cribs and filling. The latter are doing nearly all the contract work on this division, except the iron bridges, which are all built by the above bridge company. The timber bridges are all built by Geo. W. White.

At Charlotte 500 lineal feet of dock has been built on the company's land, a 40×96 ft. freight house and a large number of sidings. An engine-house of brick is being built, and a station house, 30×96 ft. The company is now prepared and expects to do a large business at this place, it being a lake port and there being an extensive fruit country about it.

The First Chinese Railroad.

To THE EDITOR OF THE RAILROAD GAZETTE:

I have read with much interest your article on "A New Field for Railroads," in your issue of 23d instant. As one of the original promoters and directors of the railroad which you mention, I am glad to inform you that some of the "enterprising and influential merchants" alluded to had a prominent share in the inauguration of the scheme, and have, indeed, given close and interested attention to the subject for years past. After encountering many obstacles, they have at last some hope of success; and should this short line lead to extensions, you would by no means have overestimated the magnitude of the field that would be opened. I believe that every practicable step has been taken to secure such a consummation, but I should tell you that the brunt of the affair has been borne by a few persons, who have by no means met with general encouragement or support. The organization is, however, believed to be adequate to dealing with all possible development of the enterprise.

BOSTON, Oct. 25, 1875.

Brotherhood of Locomotive Firemen.

GALION, Ohio, Oct. 26, 1875.

To THE EDITOR OF THE RAILROAD GAZETTE:

The Brotherhood of Locomotive Firemen hold their second annual convention at the city of Indianapolis, during the week ending Dec. 18, 1875.

There being some 96 lodges, a big representation of delegates is expected. This organization was instituted by the firemen of the Erie Railway some three years ago, and to day it spreads its good influences over 20,000 miles of track. The objects are the elevation and protection of the firemen.

WM. N. SAYRE, Secretary.

General Railroad News.

ELECTIONS AND APPOINTMENTS.

Brownsville & Redstone.—The first board of directors is as follows: J. H. Bowman, Wm. S. Duncan, John R. Dutton, A. F. Gabler, George E. Hogg, Adam Jacobs, Brownsville, Pa.; J. J. Hazlett, Wm. Welsh, Greensburg, Pa.; Louis McFarland, F. B. Schallenbach, Irwin's, Pa.; Robert Hogsett, Uniontown, Pa. This board has elected J. H. Bowman, President; John R. Dutton, Vice-President; Wm. S. Craft, Secretary and Treasurer; Thomas R. Booth, Chief Engineer.

European & North American.—Mr. Frank W. Cram, General Freight Agent, has been appointed Acting General Superintendent in place of M. H. Angell, resigned.

Kansas City, Burlington & Santa Fe.—Wm. H. Schofield is President and A. C. Titus Chief Engineer. The office is in Williamsburg, Kan.

St. Louis, Kansas City & Northern.—Mr. Thomas McKissick, late of the St. Louis, Iron Mountain & Southern, has been appointed General Superintendent.

Cincinnati, Sandusky & Cleveland.—At the annual meeting in Sandusky, O., Oct. 20, the following directors were chosen:

John G. Deshler, Columbus, O.; George Wilshire, Cincinnati; John Atkinson, N. W. Pierce, Boston. The board elected J. S. Farlon, President; Geo. Wilshire, Vice-President; J. L. Moore, Secretary and Treasurer. Mr. Geo. Wilshire succeeds Wm. Wilshire deceased.

Vermont & Canada.—At the annual meeting in Bellows Falls, Vt., Oct. 22, Edward Bangs, Bradley Barlow, John Eustis, J. N. A. Griswold, W. Mixter, J. R. Nichols and Samuel Wells were chosen directors. Messrs. Eustis and Bangs are new directors, replacing F. A. Brooks and E. A. Bowles.

Norwich & New York Transportation Co.—At the annual meeting in Norwich, Conn., Oct. 20, the following directors were chosen: G. W. Gil, F. H. Dewey, Oliver Woodworth, Wm. T. Hart, Charles T. Clark, Simeon E. Baldwin, Gilbert W. Phillips, Moses Pierce, Charles W. Copeland. The board re-elected Moses Pierce, President; S. A. Gardiner, Jr., Superintendent; H. L. Parker, Treasurer.

North Simcoe.—At the annual meeting in Barrie, Ont., the following directors were chosen: J. S. McMurray, A. S. A. Manning, T. R. Fuller, A. A. Thompson, Charles Beck, Wm. M. Kelley, H. E. Jeffrey. The board elected J. S. McMurray President and Managing Director; R. R. Thompson, Vice-President; J. R. Fuller, Secretary and Treasurer.

St. John's, Lake Eustis & Gulf.—Mr. James E. Drake, of Lake Eustis, Fla., is President.

New York, New Haven & Hartford.—Mr. George H. Watrous, of New Haven, Conn., has been chosen a director in place of Ezra C. Read, deceased.

Cincinnati, Lafayette & Chicago.—Mr. James H. Stewart, of Madison, Wis., has been appointed General Superintendent in place of Mr. Waldron, who has gone to the Ohio & Mississippi. Mr. Stewart was formerly connected with the Sandusky, Mansfield & Newark road, and has since been Superintendent of the Winona & St. Peter.

Concord & Portsmouth.—At the annual meeting in Manchester, N. H., Oct. 7, the following directors were chosen: John J. Pickering, Portsmouth, N. H.; Stephen Kendrick, Franklin, N. H.; Samuel P. Dow, Epping, N. H.; Joseph B. Walker, Concord, N. H.; Samuel N. Bell, Benj. F. Martin, Nathan Parker, Manchester, N. H. The board elected Stephen Kendrick President, and Wm. H. Hackett Clerk and Treasurer.

Indianapolis, Bloomfield & Evansville.—The directors of this new company have elected officers as follows: President, Jason N. Conley, Bloomfield, Ind.; Vice-President, W. W. Curry, Indianapolis; Secretary, E. P. Williams, Bloomfield, Ind.; Treasurer, Wm. Mason, Bloomfield, Ind.

Western Union.—Mr. F. G. Ranney has been elected Secretary and Treasurer in place of F. R. May, who has resigned. His office is in Milwaukee, Wis.

Davenport & St. Paul.—Mr. N. H. Wood having resigned as Superintendent, that office is discontinued and the duties will be assumed by the General Manager, Mr. John E. Henry. All communications relating to the transportation of persons or property will be addressed to Mr. John L. Kellogg, General Ticket and Freight Agent.

Indianapolis, La Porte & Michigan City.—At the annual meeting in Michigan City, Ind., recently, the following directors were chosen: Wm. Cutting, Haywood Cutting, David Macy, A. B. Southard, V. J. Malott and Jesse Zern. The road is leased to the Indianapolis, Peru & Chicago.

Pulman Palace Car Company.—Mr. John McCoy has been appointed Assistant Superintendent of the Northern Division, in place of A. B. Winfield, resigned. Col. Charles Ball has been appointed Superintendent of the Southern Division, in place of H. B. Latrobe, resigned.

Logansport, Crawfordsville & Southwestern.—Mr. J. E. Harris has been appointed General Passenger and Ticket Agent.

Illinois Railroad Commission.—Mr. Frederick T. Dubois has been appointed Secretary of the Commission, in place of Col. McLaughlin, resigned.

Ohio & Mississippi.—Col. F. M. Malone, of Pana, Ill., has been appointed General Stock Agent of the Springfield Division.

Pittsburgh, Cincinnati & St. Louis.—Mr. John W. Renner has been appointed Auditor. He has been Acting Auditor for some months.

Western Maryland.—At the annual meeting in Baltimore, Oct. 20, the following directors were chosen: Joshua Biggs, Rocky Ridge, Md.; G. W. Harris, Hagerstown, Md.; Isaac Motter, Williamsport, Md.; John Welty, Smithsburg, Md.; John K. Longwell, Westminster, Md.; Samuel H. Adams, Geo. M. Boke, Wm. A. Boyd, Jr., D. J. Foley, J. A. Griffith, E. G. Hipsley, Alexander Rieman, Wm. Seemuller, Baltimore. They are all re-elected.

Indianapolis, Bloomington & Western.—Mr. J. P. Buser has been appointed Western Agent, with headquarters at Burlington, Ia., and Mr. W. N. Jarvis, Northwestern Agent, with office at Davenport, Ia.

Burlington & Southwestern.—Hon. Elijah Smith has been appointed Receiver by the United States Circuit Court and has taken possession.

Burlington, Monmouth & Illinois River.—This company has been organized by the election of the following directors: for three years, M. R. Hardin, Lawrence and Jones; for two years, D. P. Phelps, J. R. Webster and Lafferty; for one year, Wm. Hanna, George Snyder and Parry. The board elected Wm. Hanna President; Delos P. Phelps, Vice-President; George Snyder, Secretary; Dr. J. R. Webster, Treasurer. The office is at Monmouth, Warren County, Illinois.

Wolfboro.—At the annual meeting in Wolfboro, N. H., recently, John Wooldredge, Frank Jones, George W. Burleigh, John M. Brackett, Joseph L. Avery, Blake Folsom and John W. Sanborn were chosen directors. The board elected John Wooldredge President. The road is leased to the Eastern.

PERSONAL.

—Mr. Wm. Willshire, Vice-President of the Cincinnati, Sandusky & Cleveland Company, and a prominent merchant of Cincinnati, died at his residence in that city Oct. 17, at the age of 68 years.

—Dr. J. A. S. Milligan, Cashier of the Georgia Railroad, died at his residence in Augusta, Ga., Oct. 15, of typhoid fever.

—Mr. A. L. Green, President of the Coldwater, Marshall & Mackinac Company, while superintending the construction of a bridge over Battle Creek, near Marshall, Mich., Oct. 19, was struck on the head by a falling timber and dangerously if not fatally injured.

—Mr. A. H. Berry has resigned his position as General Freight Agent of the Maine Central Railroad.

—Mr. W. D. Bishop, President of the New York, New Haven & Hartford Company, celebrated his "silver wedding" at his residence in Bridgeport, Conn., Oct. 21. A large number of distinguished railroad men and others were present.

—Col. L. B. Smith, General Accountant of the Illinois Central road, died quite suddenly Oct. 19. He was considered one of the best railroad accountants in the country.

—Mr. Charles W. Hart has resigned his position as Superintendent of Telegraph of the St. Louis, Lawrence & Western road, to begin the study of medicine in Philadelphia.

—Mr. D. C. Axtell, Superintendent of the Cairo Division

of the St. Louis, Iron Mountain & Southern Railroad, was married recently to Miss May Cantrell, of Little Rock, Ark., and started east on a bridal tour.

It is said that Mr. A. N. Chrystie, late Vice-President and General Superintendent of the Ohio & Mississippi, will reside for the future at Havre, France, as agent for a steamship line.

The employees of the North Division of the Illinois Central have presented Mr. John C. Jacobs with a handsome carriage and a service of silver plate on the occasion of the 19th anniversary of his appointment as Superintendent of the division. The presentation took place at Amboy, Ill., Oct. 12.

TRAFFIC AND EARNINGS.

Coal Movement.

The following coal tonnages are reported for the week ending Oct. 16:

	1875.	1874.	Inc. or Dec.	P. c.
Anthracite.....	546,364	512,112	Inc. 34,242	...
Semi-bituminous, Broad Top and Clearfield.....	26,428	...	...	...
Cumberland.....	49,587	...	...	...
Bituminous, Barclay.....	9,211	...	...	...
" Western Pa.	35,121	...	...	...
" West Va.	4,886	...	...	...
Coke, Western Pa.	12,868	...	...	...
Total.....	95,483	...	...	...

The coal traffic of the Pennsylvania Railroad for the first week in October was:

	Tons.
Anthracite.....	20,213
Bituminous.....	62,402
Coke.....	12,368
Total.....	95,483

Northwestern Freight Rates.

The following new schedule of rates per 100 pounds from Chicago to the Missouri River has been adopted:

	1st class.	2d class.	3d class.	4th class.	Special.
To Council Bluffs.....	80 cts.	60 cts.	45 cts.	35 cts.	30 cts.
To Omaha.....	85 "	65 "	50 "	40 "	35 "

Car-load rates are as follows:

	Class A, per car.	Class B, per car.	Class C, per ton.
To Council Bluffs.....	\$70	\$60	\$5
To Omaha.....	80	70	5

The other lines will probably adopt the same rates.

Flour and Grain Movement.

Receipts and shipments for the week ending with Oct. 16 are quoted as follows, flour in barrels and grain in bushels:

	1875.	1874.	Inc. or Dec.	P. c.
Lake ports' receipts.....	140,776	150,448	Dec. 9,672	6.4
" shipments.....	147,438	133,864	Inc. 13,574	10.1
Atlantic ports' receipts.....	240,389	273,021	Dec. 32,632	11.9

	1875.	1874.	Inc. or Dec.	P. c.
Lake ports' receipts.....	2,789,092	2,318,342	Inc. 470,860	20.3
" shipments.....	2,297,987	1,910,905	Inc. 387,082	20.3

	1875.	1874.	Inc. or Dec.	P. c.
Atlantic ports' receipts.....	1,649,031	1,249,021	Inc. 400,010	32.0

	1875.	1874.	Inc. or Dec.	P. c.
Wheat:				
Lake ports' receipts.....	4,986,513	4,006,901	Inc. 979,612	24.5

	1875.	1874.	Inc. or Dec.	P. c.
" shipments.....	3,998,955	3,590,622	Inc. 408,133	11.4
Atlantic ports' receipts.....	3,817,656	3,154,393	Inc. 663,263	21.0

	1875.	1874.	Inc. or Dec.	P. c.
Grain of All Kinds:				
Lake ports' receipts.....	2,789,092	2,318,342	Inc. 470,860	20.3

	1875.	1874.	Inc. or Dec.	P. c.
" shipments.....	2,297,987	1,910,905	Inc. 387,082	20.3
Atlantic ports' receipts.....	1,649,031	1,249,021	Inc. 400,010	32.0

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Atlantic ports' receipts.....	1,649,031	1,249,021	Inc. 400,010	32.0

	1875.	1874.	Inc. or Dec.	P.



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Editorial Announcements.

Addresses.—Business letters should be addressed and drafts made payable to THE RAILROAD GAZETTE. Communications for the attention of the Editors should be addressed Editors, RAILROAD GAZETTE.

Passes.—Having been informed that an advertising solicitor has requested passes on account of the Railroad Gazette, we take this occasion to say that all persons connected with this paper are forbidden to ask for passes under any circumstances, and we will be thankful to have any act of the kind reported to this office.

Advertisements.—We wish it distinctly understood that we will entertain no proposition to publish anything in this journal for pay, EXCEPT IN THE ADVERTISING COLUMNS. We give in our editorial columns OUR OWN opnions, and those only, and in our news columns present only such matter as we consider interesting and important to our readers. Those who wish to recommend their inventions, machinery, supplies, financial schemes, etc., to our readers can do so fully in our advertising columns, but it is useless to ask us to recommend them editorially, either for money or in consideration of advertising patronage.

Contributions.—Subscribers and others will materially assist us in making our news accurate and complete if they will send us early information of events which take place under their observation, such as changes in railroad officers, organizations and changes of companies, the letting, progress and completion of contracts for new works or important improvements of old ones, experiments in the construction of roads and machinery and in their management, particular as to the business of railroads, and suggestions as to its improvement. Discussions of subjects pertaining to ALL DEPARTMENTS of railroad business by men practically acquainted with them are especially desired. Officers will oblige us by forwarding early copies of notices of meetings, elections, appointments, and especially annual reports, some notices of all of which will be published.

THE CENTENNIAL.

The impression which a stranger gets in Philadelphia at the present time is, that the whole city is a mere adjunct to the Centennial—that the latter is the real and abiding thing, and all the rest ephemeral and transitory; just as Saratoga and its people exist only because of the springs there. Everything in Philadelphia is named Centennial, from a cocktail to a locomotive; everybody talks Centennial, and the shop windows blossom with pictures of the buildings, and life at present seems hardly worth possession to the average Philadelphian were it not for the anticipation of the great anniversary exhibition of next year. There is also a sort of sad pathos with which the inhabitants of the city of Penn regard all who live without its favored precincts, and who therefore have no adequate appreciation of what the Centennial will be. This feeling, too, seems to be not unmixed with exultation at the fact that Philadelphians are thus the subjects of a special illumination, whereas outsiders are not. Ever since the Centennial was proposed, people in the rest of the country have smiled at the enthusiasm of Philadelphians, but have shown very little enthusiasm themselves. A great many of them, we are satisfied, would like to feel enthusiastic over the dash which is written thus, 1776—1876, but can't. To all such we recommend from experience a journey to Philadelphia during this pleasant Indian Summer weather. There are those who have done so, and are enthusiastic and feel patriotic. The buildings in Fairmount Park have brought back the flavor and reminiscences of Fourth of July celebrations of many years ago, and rekindled glow of enthusiasm which is, we believe, quite wholesome for all American citizens.

To speak more soberly of what Philadelphians have done and are doing, it must be said that they have quietly gone to work and are carrying out their part of the work with a degree of energy and skill such as has never been shown in this country in any similar undertaking. They have not only organized this great project, but they have plunged deep down into their pockets and anchored the fulcrums of the levers with which they intend to move the world to the firm foundation of the wealth which years of patient industry and skill have laid so broadly and so firmly in this fair and well-to-do city. Her people have organized and are carrying out this great work so quietly, and the visitor finds so much

more accomplished than he expected, that he is inclined to believe that one of the deficiencies of Philadelphians is power of expression. If Boston had done what Philadelphia is doing, the event would have been celebrated in stately prose and rhythmic verse, and the achievements sounded from one end of the land to the other. If New York was accomplishing what its neighbors are, it would have loaded the fast mail trains with newspapers heralding its own praises until the speed of the trains would have been diminished by the weight they would have been obliged to carry. If Baltimore had devised what Philadelphia is carrying out, every loyal son living under the shadow of Washington Monument would have swallowed another dozen of fat oysters daily, and folded his hands complacently over his stomach. If Chicago was rearing buildings whose size could compare with that of the prairie on which she is built, every loyal inhabitant would bubble over with commendatory adjectives, and her newspapers would make the lives of St. Louisians quite undesirable. St. Louis with the Centennial would grow prophetic, and offer to contract for the removal of the buildings at Washington to the "most splendid geographical position of the West."

Philadelphia simply goes on with her work. Her machines are many of them more rhythmical than her poets; her newspapers are less eloquent than the facts which they chronicle; her people when they think a great thought seek relief in great deeds and not by the folding of hands; her phraseology has grown smooth by reason of eating much fresh butter and is without the picturesqueness which the imaginative fertility of the West adds to the narratives of the Chicagoans; and she was the capital of the country now so long ago that there is no need to achieve that honor after the lapse of a century, and so she is quietly doing a work whose magnitude none can realize until they see it.

Letters and circulars and pictures, describing the preparations for the coming exhibition, have doubtless come to the notice of most of our readers, but even with the most careful attention to these it is quite impossible for any one to form anything like an adequate idea of the extent of the preparations and the plans for this exhibition. It is quite strange how inadequate words alone are to convey any idea of the extent of any object, unless it is possible to recall something which the person for whom the description is intended has seen, with which the thing described can be compared. To tell any one that the main exhibition building for the Centennial is 1,880 feet long and 464 feet wide gives very little or no idea of its size; but as most persons are accustomed to measure distance by miles, to tell them that the building is more than a third of a mile long will give them some little idea of its size. The space covered by the roof is more than 20 acres in area. The Machinery Hall is a separate building, 1,402 feet long \times 360 wide, and with its annex, which is 208 \times 210 feet, covers an area of nearly 13 acres. The space between these two buildings is 542 feet, and their fronts being on the same line, the distance from the east end of the main building to the west end of the machinery hall is 3,824 feet, or nearly three-quarters of a mile. Besides these two buildings, there is the Art Gallery, Horticultural, Agricultural and Government Buildings, with the following dimensions :

Main Building, 1,880 \times 464 ft., area.....	20.02 acres
Machinery " 1,402 \times 360 ft., "	12.82 "
Art " 365 \times 210 ft., "	1.5 "
Horticultural " 358 \times 193 ft., "	1.5 "
Agricultural " 620 \times 540 ft., "	10.15 "
Government " "	2.00 "
	47.99 "

Besides the buildings enumerated, there will be numerous smaller ones to be erected by foreign governments, associations, etc., which will doubtless increase the total area of the space roofed over to more than 50 acres, or equal to a fair-sized farm.

The design of the two main buildings is of what might be called the utilitarian order of architecture; that is, they are built to serve the purposes for which they are intended in the most effective manner which the present knowledge of the production of materials and of construction would permit. The main building is composed of wrought-iron columns, which support wrought-iron trusses. The columns are composed of rolled channel bars with plates riveted to the flanges. The roof trusses are similar in form to those in general use for depots and warehouses, and consist of straight rafters with struts and tie-bars. The roof is divided into seven spans, the central one of 120 feet span. On each side of these are two "side avenues," the roofs of which are of 100 feet span. Outside of these are "central aisles" of 48 feet span, and outside of these "side aisles" of 24 feet span.

The construction of the Machinery Hall consists of solid wooden columns supporting roof trusses, constructed with straight wooden principals and wrought-iron ties and struts.

The Art Gallery is built of granite and "in the modern renaissance," with a dome of iron. This building is intended to be a permanent one. The Horticultural Building is of the Moresque style of architecture, ornamented with a great deal of color. The Agricultural Building

" consists of a long nave crossed by three transepts, both nave and transept being composed of Howe truss arches of a Gothic form."

We have given this brief description of these buildings not with the expectation that it is at all adequate to give an idea of what they are, but simply to call attention to the exhibition and, if possible, convey to those who have not visited them some conception of the extent and the magnitude of the Centennial celebration which our Philadelphia neighbors have been organizing.

The buildings, with the exception of the Agricultural Hall, are already very far advanced toward completion. The Machinery Building is all under roof, and we presume that by the time this reaches most of our readers the whole of the main building will also be equally far advanced. The Art Gallery and the Horticultural Building are also nearly under roof, and there seems every reason to believe that the buildings will be ready before they are needed.

The very discouraging fact exists, however, that, owing to the apathy which prevails on this subject among many of our people, there is danger that we may be beaten on our own field by foreigners; and in no department does this seem more probable than in that of railroad equipment. Railroad companies themselves have no end to serve in such an exhibition, other than a public one, and, as is well known, the bosoms of corporations do not often heave with patriotic or any other emotions. In other words, railroad companies, not being manufacturers of machinery or material for sale, have not the motive which those who make such articles to sell have, in exhibiting their productions, which in the latter case to a great extent is to advertise and make known what they make. Now there will very probably be a large exhibition of private manufacturers of and dealers in railroad material; yet we believe it is quite doubtful whether there will be a full exhibition which would represent the state of the art of railroading completely in this country at this time unless such an exhibition is organized by some commission, association or individuals who would feel an interest in making it a representative one. Impracticable inventors of all kinds of patented traps will doubtless swarm at the doors of the exhibition; but it is not wild schemes and undeveloped ideas that are most needed to represent the railroad interest. An exhibition to be representative should be under the direction of experts who would discriminate between what is worthy of exhibition and what is not. We believe that there is no department of the Exhibition which will attract the attention of foreigners more than that of the railroad, and, as we have said, there is none that promises to be more incomplete. Now, while railroad companies have no especial interest in this matter, we believe that the great majority of railroad officers could very easily be induced to send whatever would add to the interest of this department if the request were only made by men authorized to make it, and competent to discriminate between what is good and what is bad. We doubt very much whether it would occur to any railroad company to send a snow plow to the Exhibition; and yet it is quite certain that if one was sent it would be an object of very great interest to all foreign engineers, and doubtless, too, to most native ones. As the exhibition is held during the summer months, it would be no inconvenience for one or more of our New England roads to send specimens of such implements or machines.

At the risk of repeating what we have written before we will say that in permanent way it would be extremely interesting if the leading lines here could be induced to send specimens of the rails and rail fastenings used on their lines. Two short pieces of rails spiked down to cross-ties would represent the method of fastening rails perfectly. Frogs, switches, crossings and especially signals quite naturally suggest themselves. A complete exhibition of the latter would probably do more to bring about the much desired and desirable uniformity than anything else, as it would afford opportunity of making comparisons of one system with another. In rolling stock there is a very much larger field. An exhibition of all classes of freight and passenger cars as well as of locomotives would be extremely interesting, and although they would occupy much room, they might be exhibited outside of the buildings and need not be under cover, thus saving much room, of which we learn there is likely not to be enough, notwithstanding the enormous size of the buildings.

It is of course very much easier to suggest that a thing should be done than to devise the means of doing it effectively. The source from which the country ought naturally to expect such supervision of an exhibition as we have indicated is the American Society of Civil Engineers. Without proper organization the exhibition is likely to be one which will be a source of humiliation instead of pride to American engineers, and it is in the power of the society referred to, without any expenditure of money, but simply by intelligent supervision, to prevent so lamentable a failure and so beggarly an exhibition as this country made at Vienna. It is, however, quite uncertain whether this association would regard such efforts as consistent with "the policy of the Society," and we are afraid that

some of its members might regard an international exhibition, which is intended to spread knowledge as widely as possible, as "unprofessional."

The thing which seems to be needed is either an individual, a commission, or an association composed of experts in railroad matters, who will select and *solicit* the exhibition of such objects as will adequately represent the art of railroading at the present time, and exclude those which are not representative, but which are undeveloped or visionary.

In the system of classification adopted by the Central-National Commission, railroad equipment is classified under the general head of "Railway Plant, Rolling Stock, and Apparatus." This is subdivided and numbered as follows:

Class 570.—Locomotives, models, drawings, plans, etc.

Class 571.—Carriages, wagons, trucks, cars, etc.

Class 572.—Brakes, buffers, couplings, and snow plows.

Class 573.—Wheels, tires, axles, bearings, springs, etc.

Class 574.—Permanent ways, ties, chairs, switches, etc.

Class 575.—Station arrangements, signals, water-crane, time-tables.

Class 576.—Miscellaneous locomotive attachments.

Class 577.—Street railways and cars.

Besides these there are several other classes under the head of "Machines and Tools" which apply to railroads.

If now these departments were placed under the charge of competent persons who would determine what articles would serve best to set forth the American system of railroad construction and operation, and would then invite railroad companies' officers and manufacturers to send them, at the same time discouraging the "tin-pan" class of mechanism and construction, we feel satisfied that the exhibition would be very much more complete and creditable to us than it is likely to be without such supervision.

Progress in Traffic, Rates and Expenses on New York Railroads.

In the *Railroad Gazette* of October 16 we presented an analysis of the New York Railroad Report for 1873-74 in such a way as to show with some minuteness the condition of railroad business that year, and a comparison of it with the business of the previous year. As there have been many changes in the extent of the New York railroad system since the war, and some in the methods of conducting traffic on it, we have thought it desirable to examine the records for several years, chiefly for the purpose of ascertaining the growth of traffic in comparison with the increase in railroad mileage, and the receipts and expenses per unit of traffic.

To ascertain the traffic—the extent to which, on an average, the railroads are used—we have divided the train-mileage and the numbers of passengers and tons of freight carried one mile by the number of miles of railroad on which this work was done, thus giving the traffic per mile of road. This we give in the table below, and with it the mileage, which, by the way, is the total of the companies reporting to the State, and much more than the mileage within the State, especially of late years:

Moved one mile per mile of road.

Miles of road.	Trains.	Passengers.	Tons of freight.
1867	3,663	5,751	326,497
1869	4,429	5,365	380,711
1870	6,191	5,624	428,715
1871	6,977	7,001	332,945
1872	7,883	7,237	476,953
1873	8,209	7,871	338,334
1874	8,652	7,900	525,842

Here we see that the train-mileage per mile of road increased less than 27 per cent. in the seven years from 1867 to 1874, that the passenger mileage decreased nearly 28 per cent., while the freight-mileage increased 61 per cent. That is, passenger traffic has not nearly kept up with the increase of railroads, and freight traffic has far surpassed it. On the average the New York railroad has a fourth less passenger traffic than in 1867. This of course does not mean that there has been no increase to passenger traffic: there has been some increase; but a large proportion of the new roads have obtained very little, and these bring down the average amount per mile of road. The train-mileage is not an accurate measure of traffic, as train capacities vary much, and have been changed considerably of late years on the more important roads by the introduction of more powerful locomotives. It does, however, measure pretty well the use made of the tracks. In 1867 (the years all end with September), there was an average of 7.9 trains each day; in 1874 the number was just 10. Evidently the railroads of the State are not, as a whole, by any means crowded. With an efficient signal system the entire circulation of trains, if evenly distributed on the roads, could be confined to one hour of the twenty-four. More interesting is the progress made in the economy of working these railroads.

The receipt, expense and profit per train-mile for the years mentioned have been:

Receipt.	Expense.	Profit.
1867.....	\$2 36%	\$1 66
1869.....	2 28	1 55 1/2
1870.....	1 97%	1 32 1/2
1871.....	1 64	1 10 1/2
1872.....	1 63%	1 11 1/2
1873.....	1 61 1/2	1 10
1874.....	1 67	1 05 1/2

This shows decided progress, but not so much as has

RAILROAD EARNINGS IN SEPTEMBER.

Name of Road.	Mileage.					Earnings.					Earnings per Mile.	
	1875.	1874.	Inc.	Dec.	Per c.	1875.	1874.	Increase.	Decrease.	Per c.	1875.	1874.
Burlington, Cedar Rapids & Minnesota.	424	424	0	0	0	\$117,928	\$119,626	-\$1,698	0	1.4	\$278	\$282
Central Pacific.	1,315	1,260	55	44	4.4	1,561,000	1,371,739	\$180,261	1,002	2.5	1,187	1,089
Cincinnati, Lafayette & Chicago.	75	75	0	0	0	39,103	40,105	-1,002	0	521	535	535
Georgia.	228	228	0	0	0	103,480	94,255	9,225	0	9.8	454	413
Houston & Texas Central.	508	508	0	0	0	254,369	234,380	19,980	0	8.5	501	461
Illinois Central.	1,100	1,100	0	0	0	737,834	758,536	-20,702	2.7	665	684	684
International & Great Northern.	458	458	0	0	0	88,501	105,945	-17,444	16.5	193	231	231
Kansas Pacific.	761	761	0	0	0	318,111	302,318	15,793	0	5.2	418	397
Keokuk & Des Moines.	161	161	0	0	0	80,539	68,455	12,084	0	17.6	500	425
Lake Shore & Michigan Southern.	1,175	1,175	0	0	0	1,262,700	1,532,602	-269,902	17.6	1,075	1,304	1,304
Missouri, Kansas & Texas.	786	786	0	0	0	299,996	334,496	-34,501	10.3	382	426	426
Ohio & Mississippi.	615	593	22	55.5	36.5	318,966	331,661	-12,695	3.8	519	544	544
Philadelphia & Erie.	288	288	0	0	0	344,047	336,150	7,897	0	2.3	1,196	1,167
St. Louis, Alton & Terre Haute—Belleville Line.	71	71	0	0	0	48,543	55,382	-6,739	12.2	684	779	779
St. Louis, Iron Mountain & Southern.	685	685	0	0	0	342,800	292,216	50,584	0	17.3	500	427
St. Louis, Kansas City & Northern.	504	504	0	0	0	246,624	249,733	-3,109	1.2	489	496	496
St. Louis & Southeastern.	349	349	0	0	0	88,676	118,812	-30,136	25.4	254	340	340
Toledo, Peoria and Warsaw.	235	237	2	0.78	0.88	136,542	107,338	29,204	0	27.2	576	455
Union Pacific.	1,032	1,032	0	0	0	1,042,000	1,063,993	-21,993	2.1	1,010	1,031	1,031
Totals.	10,781	10,504	277	0	0	\$7,431,758	\$7,517,642	-\$334,037	0	419,921	4688	4716
Total increase or decrease.	.....	.....	277	0	0	2.6	.....	85,894	1.1	.....	.....	.....

RAILROAD EARNINGS, NINE MONTHS ENDING SEPTEMBER 30.

Name of Road.	Mileage.					Earnings.					Earnings per mile.					
	1875.	1874.	In.	Dec.	Per c.	1875.	1874.	Increase.	Decrease.	P. c.	1875.	1874.	In.	Dec.	Per c.	
Central Pacific.	1,303	1,260	43	0	3.4	\$12,480,128	\$10,205,100	\$2,174,984	0	21.1	\$9,578	\$8,170	\$1,399	0	17.1	
Cincinnati, Lafayette & Chicago.	75	75	0	0	0	289,318	328,063	-38,745	4,374	0	318	11.8	0	0	0	
Illinois Central.	1,109	1,109	0	0	0	5,459,207	5,661,814	-192,607	3.6	4,923	5,105	0	182	3.6	0	
International & Great Northern.	458	421	37	0	8.8	\$21,097	82,183	0	2,096	0.3	1,793	1,065	0	162	8.3	0
Kansas Pacific.	761	761	0	0	0	2,356,223	2,405,183	-48,960	2.0	3,096	3,161	0	65	2.0	0	
Keokuk & Des Moines.	161	161	0	0	0	612,312	500,789	113,523	0	22.3	3,903	3,110	693	0	22.3	
Missouri, Kansas & Texas.	786	786	0	0	0	2,024,848	2,269,037	-24,194	11.9	2,876	2,925	0	340	11.9	0	
St. Louis, Alton & Terre Haute, Belleville Line.	71	71	0	0	0	401,692	393,804	7,888	0	5,658	5,547	111	0	2.0	0	
St. Louis, Iron Mt. & Southern.	685	684	1	0	0.1	2,486,694	2,199,204	286,490	0	13.2	3,638	3,215	418	0	13.0	0
St. Louis, Kansas City & North'n.	504	485	19	0	3.9	1,880,843	1,865,778	15,068	0	4.2	3,739	3,723	9	0	0.2	0
St. Louis & Southeastern.	349	349	0	0	0	708,699	921,305	-212,606	23.1	2,031	2,640	0	609	23.1	0	
Toledo, Peoria & Warsaw.	234	237	3	1.3	0	923,958	826,337	96,616	0	11.9	3,944	3,491	453	0	13.0	0
Union Pacific.	1,032	1,032	0	0	0	8,663,427	7,530,184	1,143,243	0	15.2	8,395	7,287	1,108	0	15.2	0
Totals.	7,528	7,431	100	3	0	\$39,100,301	\$35,989,880	\$3,119,511	0	35,195	\$4,843	\$352	0	7.3	0	0
Total increase.	97	1.3	0	8.7	0

been effected; for, as we have said, while the expense per train-mile has been decreasing, the average of freight load has been increasing. From 1867 to 1874 there has been a decrease of 33% per cent. in the receipt, 36 per cent. in the expense, and 27 per cent. in the profit per train-mile.

The true measure of traffic being in the mileage of passengers and tons of freight carried, the true measure of economy is in the expense of carrying per ton and per passenger per mile. For the several years, the receipt, expense and profit for these units of traffic have been, in cents:

For passenger mile.	For ton mile.
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left to its own resources. Many of the bondholders consented to fund their coupons for a time, but the managers failed even to pay interest on these funded coupons, and the agreement is consequently void.

As many of the owners of the property are personally not familiar with it, some brief description of it may be acceptable. Leaving the Pennsylvania Railroad, whose depot in Jersey City it uses and on whose tracks its trains run from that place for $2\frac{1}{2}$ miles, at Marion Junction, the road turns sharply to the northward, crosses the Erie and the Morris & Essex on bridges and runs down nearly to the grade of the adjoining meadows. It then runs parallel to the Northern Railroad some five miles, turns to the west, crossing an arm of the Hackensack at the Little Ferry and runs through Hackensack to Paterson, 20 miles from Jersey City. Here it skirts around the city, turns to the northward, crossing the Erie and the Passaic River again at Hawthorne, and begins to climb the east side of the Paterson trap range. At Wortendyke, 26 miles, it is 230 feet above tide and $2\frac{1}{2}$ miles from the Erie at Hoboken. Here it turns northward and follows a branch of the Passaic, reaching an elevation of 340 feet at Wyckoff. Just beyond Campgaw, $2\frac{1}{2}$ miles, it strikes the Ramapo, turns southwest and follows it down to Pompton, turns due west again, skirting the foot of the Ramapo Mountain, crosses the Montclair just where the Wanaque Valley debouches upon the Pompton Plains, then turns a little to the northwest and begins the ascent of the valley of the Pequannock. This valley here and there widens out into a little basin occupied by a mountain farm, but is for the most part a narrow and tortuous canon just wide enough for the railroad, the river and the country road. For most of the way the line here is in a side-hill cut with an occasional trestle and here and there a through cutting where the river takes a sharper bend than usual. In the $9\frac{1}{2}$ miles from Pompton Junction to Newfoundland the road rises from 210 to 760 feet above tide, crosses the river eight times, and has hardly a tangent over 200 yards long. At Newfoundland the valley widens out and the road runs over a short stretch of nearly level track, crossing the head of the Longwood Valley at Oak Ridge, then follows the Pequannock through another narrow gorge to Stockholm, crosses the Snauftown meadows, where is a sink-hole that cost much money and time to fill, and reaches the summit, 51 miles from Jersey City and 990 feet above tide, having risen 780 feet in 16 miles. From the summit it runs down through two long rock cuttings and over a high intervening trestle and winds out into, or rather over, the Wallkill Valley, less than a mile from Franklin Furnace and 250 feet above it. Here it turns directly to the southwest, running down along the side of the mountain to a level of 530 feet at Ogdensburg, 56 miles, then turns sharp to the west and runs across the Wallkill Dyke. This is a remarkable natural embankment, composed of sand and boulders varying from several tons to a pebble, called by geologists the terminal moraine of an ancient glacier, and is full 100 feet high, a mile long and from 100 to 200 feet wide at top. At the west end the river had cut a passage through, which the railroad has filled with an artificial embankment, leaving a large culvert through which pass the Wallkill River and the country road. On the west side there is a siding running to the Sterling Hill zinc mines, and the main line turns sharp northward and runs along the side of the valley, nearly reaching its general level at Franklin Furnace, where it meets the Sussex Railroad. Thence it keeps on nearly due north through the center of the valley, parting near Hamburg with the Warwick Extension of the Sussex, which runs on the Midland track from Franklin. North of Hamburg the Pochuck Mountain cuts the valley sharply in two; the Midland follows the western branch through Deckerstown to Unionville, where it crosses the New York State line and runs north by east to Middletown, 14 miles from Unionville and 88 from Jersey City, over the Middletown, Unionville & Water Gap road, which it leases.

The road has few branches or feeders and must necessarily depend for traffic mainly upon the business originating upon its own line. Near Charlotteburg the Green Pond Railroad brings to it the freight of some iron mines, which, when the iron business revives somewhat, will doubtless be considerable. At Franklin Furnace there is some interchange of traffic—mainly of coal and ore—with the Sussex Railroad. The through freight from the New York & Oswego Midland, not very great in amount at best, is under present arrangements largely diverted to the Erie at Middletown. Indeed the New Jersey Midland is not fitted for through business; the heavy grade from Ogdensburg to the summit going east, and the high grades and sharp curves through the Pequannock valley going westward effectually prevent any competition with the Erie on business to Middletown and beyond except at a ruinous loss. As to the local business, the upper end of the road, from Middletown to Ogdensburg, 22 miles, runs through an exceedingly fertile farming country, the upper portion of the Wallkill Valley being indeed known as the finest farming country of New Jersey. The Valley lands are generally all in cultivation, the farmers thrifty and well-to-do, but the main business of the country is in dairy products, which, while furnishing a class of freight paying high rates, do not supply nearly as great a bulk of traffic as grain. At Ogdensburg the Sterling Hill zinc mines furnish a considerable business, but from there to Pompton, 22 miles, the country is rough and poor and gives very little to the road except at Newfoundland, which is a sort of a distributing point for the hill country of upper Morris and Passaic counties. From Pompton down to Wortendyke the business is fair, but below that point we reach the region of suburban travel and of competition with other roads. There are no manufacturing establishments of much size on the line, the location of the line outside of Paterson and its lack of rail connection with the large manufacturers of that city cutting it off from their traffic and aside from the milk and other farm business, the growth of which is slow, the increase of traffic must come from suburban travel on the eastern end and from the opening of new and development of the present iron mines on the mountain section.

The iron trade has, here as elsewhere, received a serious check, but there is little doubt that it will bring, after a time, together with the carriage of coal and supplies to the mines and furnaces, a considerable and profitable business. The domestic consumption of coal along the line is continually increasing as the woodlands grow less, and it is quite an item of freight.

The suburban business is necessarily of very slow growth and at best an expensive traffic to work, giving little net profit unless there is a great deal of it, which will not be the case on the Midland for years to come. The reports heretofore made by the Receiver indicate gross earnings of between \$6,000 and \$7,000 per mile per year. Just now it requires care and the strictest economy to make them balance the expenses; but with better conditions, such improvements as can readily be made, and with proper and sufficient equipment, owned by the company, probably the road could be worked for 75 per cent. of the receipts, certainly not for less. This would leave net earnings of about \$125,000, out of which some \$20,000 must be paid for the rental of the Unionville road. It is very doubtful whether these net earnings can be increased by any great amount for years to come. No considerable improvement in grades or curves can be made without an expense entirely too great to be undertaken with any hope of a return. When the road was built a line was surveyed from the Summit in the Wallkill Mountain which ran north along the east side of the valley, then turned west and by way of Rudesville and around the foot of the Pochuck Mountain into Deckertown. This line avoided the long detour by Ogdensburg, but it was probably wise policy to reject it, as its adoption would have lost the road the Sussex connection at Franklin Furnace and the very considerable business of the zinc mines at Sterling Hill.

The road, though in much better condition than might have been expected, requires considerable expenditure in the way of widening cuts, filling trestles, ditching, and trimming water-worn slopes. The iron, originally poor, has been pretty well pounded to pieces by the heavy engines used, and much of it needs renewing at once; all of it will before long. The bridges are in fair condition, though some of them are pretty light for their work and must be rebuilt before long. Much of the equipment is hired only, and that owned is not in the best condition possible, though much has been done considering the limited facilities possessed.

When the road was abandoned by the New York Midland the officers took it, under many disadvantages, it is true, and worked along in a shiftless, hand-to-mouth fashion, taking the daily receipts to pay creditors who would not be put off with promises, letting the pay-rolls run up, supply bills accumulate and the road go to ruin as fast as it could. The receiver has reversed all this and has really done wonderfully well under the circumstances, but his hands are tied and he is naturally unwilling to do more than can be done with the earnings of the road itself. Moreover his administration is necessarily temporary in its nature, and the Chancery Court of New Jersey is traditionally averse to the long continuance of a receivership or to the increase of receivers' debts. The completion of the foreclosure cannot long be delayed, and it is to be hoped that some better agreement will soon be reached by the bondholders.

Three propositions were before them; one for a nominal sale to the South Mountain & Boston Company by the transfer of securities, the advantages of which it was hard to see; that company, while solvent so far as is known, is yet engaged in the construction of its own road, that is, the results of its own enterprise are still doubtful, and it is yet more doubtful if it can carry the burden of debt which will come to it with the Midland. The two others differed in detail, but were alike in their general features of replacing the present securities with new bonds and preferred stock and promising to resume payment of interest in two or three years. Both provide for a load of debt which the road can never carry, and their inevitable result must be a new default with a new foreclosure and its attendant expense and demoralization. In round figures and disregarding the unpaid coupons, the present debt consists of \$3,000,000 first, \$1,500,000 second, \$250,000 consolidated or third-mortgage bonds and \$350,000 floating debt, a total of \$5,100,000, or \$72,000 per mile on the 71 miles owned. As said above, it is extremely doubtful whether, for years to come, the road can earn more, allowing for necessary renewals and improvements, than \$800 to \$1,000 net per mile. The only hope of a stable organization is for bondholders to accept the situation and submit to a ruthless scaling down of the amounts of their securities and the establishment of a capital account consisting of not more than say \$20,000 stock and \$10,000 or \$12,000 funded debt per mile. On this basis there is a probability that it may become a corporation with an established credit, may pay its way, and, in time, reasonable dividends to the stockholders. The question of holding the Weehawken property for a future terminus must be left to the judgment of the owners; there is a heavy mortgage on the property, and it is extremely doubtful whether the business or prospects of the road will warrant its improvement and the building of a road through Bergen Hill to reach it for many years to come. The main thing, however, is to reorganize the company on a stable basis, and this and other matters may safely be left for after consideration.

Turning Chilled Wheels.

The discussion at the last monthly meeting of the Master Car-Builders' Association, a report of which will be found on another page, is well worth the attention of railroad managers. After resting for thirty or forty years under the impression that it was impossible to turn cast-iron wheels, Mr. Hodgman and Mr. Lobdell, of Wilmington, Del., have quietly gone to work and done it in the same way as the company of which the latter gentleman is an officer has been turning chilled rolls for years past. The result is that a pair of wheels which had been rendered useless by a slight but very common defect has, at a

comparatively small expense, been made fit to use again, and is now running under an engine, with the promise of doing as good or better service than new wheels would. The importance of this new departure may be appreciated when we remember that the number of old wheels rendered unserviceable from defects no greater than that described by Mr. Lobdell may be counted by tens of thousands. In the ordinary course of events such wheels are broken up and remelted, to make new wheels of inferior quality. It certainly would be extraordinary if it were found after we have been breaking up millions of such wheels, that we have been destroying what has a value only to be counted in millions of dollars.

The manufacturers of machine tools will, of course, not be slow to anticipate the demand for lathes to do this work, if the present and future experiments prove what there is now good reason to expect may be accomplished by turning defective wheels. Should these expectations be realized, we can anticipate a rise in the value of old wheels greater than any which has ever occurred in stocks on Wall street. We shall watch these experiments, as doubtless many of our readers will, with a great deal of interest, and we think there is good ground for anticipating a very important economy in this costly branch of railroad expenses, and also that some enterprising parties may get up a corner in old wheels, which, it may now be said, both literally and figuratively, are a very heavy article in the market.

Record of New Railroad Construction.

This number of the *Railroad Gazette* has information of the laying of track on new railroads as follows:

New York & Canada.—Extended from Westport, N. Y., north to Whalonburg, 6 miles, completing the road.

Green Lick.—Completed from Scottdale, Pa., to Mt. Vernon Ore Bank, 3 miles. It is of 3-foot gauge.

Los Angeles & Independence.—Extended eastward 8 miles to Los Angeles, Cal., 15 miles from the western terminus at Santa Monica.

This is a total of 7 miles of new railroad, making 920 miles completed in the United States in 1875, against 1,242 miles reported for the same period in 1874, 2,955 in 1873, and 5,312 in 1872.

THE FIRST CHINA RAILROAD, of which we made mention last week, is, we are glad to learn by a correspondent whose letter we publish on another page, to be partly an American and not wholly an English enterprise. In view of the extent of the field which may be opened, we may congratulate ourselves on this. It must be borne in mind that England has a great advantage in any enterprise of this kind in a new field, for it supplies the cheapest iron and the cheapest money. Those who furnish the money are apt to dictate the furnishing of supplies and the construction of the works. We doubtless will not be able to furnish any considerable proportion of the capital for Chinese railroads, and probably, for some time at least, no rails in competition with Europe. But a large part of the machinery, the bridges, the rolling stock and the men we ought to be able to supply to the advantage of both parties. The Chinese are an economical people, and we excel the world in building cheap, efficient railroads. However, one swallow does not make summer, and the field is not yet open, though the thin edge of the wedge seems to have entered.

THE MASTER MECHANICS' ASSOCIATION REPORT of the eighth annual convention is just issued, making a neat and very valuable volume of 220 pages. The Association has decided to offer these volumes for sale hereafter, and we suggest that the large number of railroad officers not belonging to the Association who wish to have the book would do well to pay for it, even when they can get one for nothing, especially if their company does not pay the dues and expenses of its master mechanics who belong to the Association. The book is now paid for by the contributions of the members of the Association, and we suggest that there is a large number of railroad officers of high grade who ought to feel a little delicate about accepting a small contribution from their master mechanics.

SEPTEMBER EARNINGS are reported by nineteen companies, with about one-seventh of the mileage of the country. Eight of them show an increase over 1874, and the aggregate decrease is but 1.1 per cent.; though, as there is some increase of mileage, it is nearly 4 per cent. in earnings per mile. The comparison, however, is with a very unfavorable year, and it is not encouraging that the roads have done not much worse than last year.

For the nine months ending with September only thirteen roads report, with a little more than a tenth of the mileage of the country. These show an increase of 8.7 per cent. in total earnings and of 7.3 per cent. in earnings per mile.

THE GREATEST RAILROAD CUSTOMER, PERHAPS, is the great brewing house of Bass & Co., of Burton, whose ale is drunk the world over. During the year ending with June last this firm paid three railroad companies a total of £189,148 19s. 3d. for carrying freight, equivalent to \$1,071,850 in our currency, of which \$967,178 went to the Midland Railway Company.

THE ENGINEERING NEWS, of Chicago, a monthly journal which we have noticed heretofore, now publishes all the papers of the Civil Engineers' Club of the Northwest as they appear, under an arrangement with the club similar to that under which formerly most of their papers were published in the *Railroad Gazette*.

MEMBERS OF THE MASTER MECHANICS' ASSOCIATION are respectively reminded that the Association needs its income to pay its expenses, and that many of them have neglected to pay their back dues. The annual report is now printed, and the bills for the work ought to be paid.

PASSENGER RATES between the East and the West by the recent advance have been restored to the standard existing for otherwise.

several years previous to the late contest—\$22 between New York and Chicago, and \$27 between New York and St. Louis.

General Railroad News.

THE SCRAP HEAP.

Runs and Speeds of English Express Trains.

A correspondent of the *English Mechanic* has compiled the following table of the length of run and speed of English trains that run more than 60 miles without stopping:

	Road.	Miles.	H. M.
Carlisle to Preston.....	L. & N. W.	89	2 18
York to Newcastle.....	N. E.	87	1 45
Holyhead to Chester.....	L. & N. W.	85	2 5
Grantham to York.....	G. N.	83	1 45
London to Rugby.....	L. & N. W.	82 1/2	1 53
London to Dover.....	S. E.	78	1 41
London to Swindon.....	G. W.	77 1/2	27
New Cross to Canterbury.....	S. E.	77	1 38
London to Peterborough.....	G. N.	76 1/2	1 30
Rugby to Crewe.....	L. & N. W.	75 1/2	1 42
Carstairs to Carlisle.....	Caledonian....	74 1/2	1 39
Newcastle to Berwick.....	N. E.	66 1/2	1 25
Oxford to London.....	G. W.	63 1/2	1 25
Kentishtown to Wellingboro.....	Midland....	62	1 25
Wigston to Laton.....	"	61 1/2	1 31

The following gives the speed in order:

	Miles per hour.
London to Swindon.....	53 1/2
London to Peterborough.....	50 1/2
York to Newcastle.....	49 1/2
Grantham to York.....	47 1/2
Newcastle to Berwick.....	47
New Cross to Canterbury.....	46 1/2
Carstairs to Carlisle.....	45 1/2
Oxford to London.....	44 1/2
London to Dover.....	44
Rugby to Crewe.....	43 1/2
London to Rugby.....	43 1/2
Kentishtown to Wellingboro.....	43 1/2
Holyhead to Chester.....	40 1/2
Wigston to Laton.....	40 1/2
Carlisle to Preston.....	38 1/2

The London & Northwestern alone uses the "jerkwater" to take water without stopping. The Great Western has a train running from London to Paddington, 191 miles, in 4 1/2 hours, on the 7 ft. gauge. The Great Northern's Edinburgh express runs on the standard gauge from London to York, 188 1/2 miles, in 4 1/2 hours.

Cost of Freight Cars in Belgium.

At a recent letting of a contract for furnishing covered four-wheeled freight cars, to carry 22,000 lbs., without brake, bids ranged from \$113 to \$500, gold, each.

Railroad Manufactures.

The Standard Steel Works, at Lewistown, Pa., is a comparatively new but flourishing concern. The leading branch of manufacture is crucible cast-steel tires, but the company has also facilities for supplying crucible steel axles, forgings, castings, etc., etc. Over 8,000 tires have been supplied from these works under their present management, since January, 1873. The office of the company is at No. 218 South Fourth street, Philadelphia.

The Indianapolis *Journal* says: "The amount of work done at the Indianapolis Rolling Mill in the nine months ending Oct. 1 makes an exhibit which will equal, if it does not exceed, any rolling mill in the country of its capacity. Double turns have been run 171 days, turning out 14,340 tons of new rails. The heaviest contracts were given by the Cincinnati, Hamilton & Indianapolis, the Indianapolis, Bloomington & Western, the Vandalia and the Jeffersonville, Madison & Indianapolis roads."

The firm of Rodger & Burchfield, prominent iron manufacturers of Pittsburgh, has suspended. They have been operating two mills, one at Leechburg and another at Apollo, Pa. Their assets and liabilities are not known.

Marchand & Morgan, of Alliance, O., recently shipped a 500-pound double-stand hammer to Lewis, Oliver & Phillips, of Pittsburgh, and a 1,000-pound hammer to Hussey, Wells & Co., of Pittsburgh. They are building a two-ton hammer for the Globe Rolling Mill Company of Cincinnati.

The Baldwin Locomotive Works in Philadelphia have recently turned out three switching engines for the Peoria & Springfield road.

The Jackson & Sharp Company, of Wilmington, Del., lately shipped a passenger coach to the Peoria & Springfield road.

The Brooks Locomotive Works at Dunkirk, N. Y., are building some new engines for the Erie.

The Harrisburg (Pa.) Car Works resumed work Oct. 18.

The Paterson Press mentions a report that the Grant Locomotive Works have secured a contract for 18 engines for a Canada road.

The Detroit Bridge & Iron Works have greatly enlarged their buildings since the fire which destroyed the western and southern wings. The new buildings are more substantial than those destroyed.

The Watson Manufacturing Company at Paterson have just completed an iron bridge of 125 feet span for the Keokuk and Des Moines road.

There is talk of establishing a new locomotive shop at Mansfield, Mass.

OLD AND NEW ROADS.

Utica, Ithaca & Elmira.

This company has made an agreement by which a third rail is to be laid on the present track of the Delaware, Lackawanna & Western road, between Cortland and Syracuse, and it will pay trackage to that company for the running of its trains over its rails. Trains will run through between Elmira and Syracuse without change, as soon as the connection is complete between Spencer and Ithaca. It is also said that the connection between Smith's Valley and De Ruyter, a gap of 18 or 20 miles, will be soon constructed, so as to finish the through line to Utica.

St. Louis & Southeastern.

The Auditor, Mr. John P. Hains, reports the actual earnings of the road for the month of September as follows:

St. Louis Division.....	\$4,305 60
Kentucky Division.....	23,712 30
Tennessee Division.....	10,658 44

Total (\$354.09 per mile)..... \$38,676 34

As compared with the earnings for September, 1874, there is a decrease in the total of \$90,135.22, or 25.4 per cent.

Montclair.

At the meeting held in Newark, Oct. 25, the purchasing bondholders completed the organization of the new company. It was resolved to call it the Montclair & Greenwood Lake Rail-road Company.

St. Paul & Pacific.

Later advices state that the meeting Oct. 11 adopted the committee's report, there being represent of the 1,700 certificates of the \$3,000,000 loan only 516, and of the 3,600 certificates of the 1869 loan only 1,244. The committee asked for time to get assents from other certificate-holders by letter and otherwise. Dr. de Klerk, who opposed this arrangement,

writes that it will be difficult to carry through the agreement, that the original bonds of the \$3,000,000 are at 82 and the committee certificates only 16, and that 90 per cent. of the bonds must assort within a year to make the arrangement effective. He reports that the committee are supposed to intend to make Mr. John Carp, who was their agent in making the arrangement with the company, a director, and to remove all the present directors, especially Mr. F. E. Delano, who is charged with having wood and elevator contracts disadvantageous to the company. The 1869 loan fell from 12 to 10 1/2 the day after the meeting, and the second section loan was unsaleable at 16 1/2.

New York & Canada.

The gap of six miles, from Westport, N. Y., to Whalburg, and which separated the two ends of the track, has been closed, and the last rail was laid Oct. 20. The road will soon be opened for business. It runs from Whitehall, N. Y., northward, following pretty closely the west shore of Lake Champlain, to Plattsburgh, and is about 90 miles long. It has been built and will be leased and worked by the Delaware & Hudson Canal Company.

Passenger Conductors' Life Insurance Association.

The eighth annual convention began its sessions at the G and Central Hotel in New York, Oct. 27, about 125 delegates being present. The annual address was delivered by Mark M. Pomeroy.

At the conclusion of his discourse, Mr. Pomeroy, on behalf of the managers of Darling's Opera House, tendered the delegates an invitation to attend Thursday evening, which was accepted. The quartette club sang another glee, and President Seymour delivered his address, dwelling on the growth and strength of the association, and predicting for it a bright future.

An invitation was also extended to visit Booth's Theater, and another from Col. R. E. Ricker, of the New Jersey Central, inviting them on an excursion to Mauch Chunk Thursday, Oct. 28, where they will participate in a ball in the evening, returning to the city on Saturday night. Messrs. George Harrison, Alexander Allen and J. C. Shields were appointed a committee to examine credentials.

The report of the Executive Committee states that during the past year of the Association the claims paid for twenty deaths amounted to \$26,643. The receipts for the year ending August 31 are \$18,495.10, and expenditures \$13,178.10, leaving a balance of \$257. The present number of members is 1,354. The total amount of benefits paid since the formation of the organization is \$731,750.

Auction Sales of Railroad Securities.

In Charleston, S. C., Oct. 12, at auction South Carolina Railroad open bonds sold for 55 1/4; Savannah & Charleston second mortgage 1 cent on the dollar.

In Philadelphia, Oct. 20, Allegheny Valley 7.3 per cent. bonds brought 93 1/2; Camden & Atlantic common stock, 51 1/2; Shamokin Valley & Pottsville stock, \$25 per share; Catawissa stock, United New Jersey Railroad & Canal stock, 13 1/2.

In New York, Oct. 23, Dayton & Michigan first-mortgage bonds brought 88; Coney Island & Brooklyn first mortgage, 75 1/2; second mortgage, 61; Paterson & Hudson River stock, 100 1/2; United New Jersey Railroad & Canal stock, 13 1/2.

St. Paul & Sioux City.

The following figures are from the reports made by the St. Paul & Sioux City and the Sioux City & St. Paul companies to the Railroad Commissioner of Minnesota for the year ending June 30, 1875:

	St. Paul & Sioux City.	Sioux City & St. Paul.
Capital stock.....	\$2,400,000	\$2,800,000
Funded debt.....	2,028,400	2,596,440
Floating debt.....	341,395	-----
Total stock and debt.....	\$4,769,695	\$5,366,440
Earnings from freight.....	336,400	169,550
" passengers.....	126,399	58,109
" express, mail, etc.....	26,660	38,264
Gross earnings.....	\$485,200	\$265,923
Working expenses.....	390,678	211,405
Net earnings.....	\$97,620	\$64,518
Per cent. of expenses.....	60.01	79.50
Taxes.....	\$17,352	\$10,791
Insurance.....	5,667	840
Interest on funded debt.....	171,671	175,860
" floating "	35,026	90
Total.....	\$228,216	\$187,081
Deficit, or net loss.....	\$130,596	\$132,563
Profits on freight trains.....	92,562	37,828
Losses on passenger trains.....	1,920	7,737
During the year 3,550 trains were run between St. Paul and Sioux City, of which 1,692 were passenger and 1,858 freight trains. The number of passengers carried was 83,946; tons of freight, 216,222. The average receipt per passenger per mile was 4.69 cents, the cost 5 cents.		

Toledo, Wabash & Western.

The offices of the Superintendent of the Eastern Division are to be removed from Lafayette, Ind., to Fort Wayne.

The New Agreement.

The results of the new agreement, said to have been made at the recent conference of managers, are apparent in the general increase of through passenger fares and freight rates between New York, Chicago and other Western points. There is talk of another increase in freight rates, but nothing is definitely known.

Wisconsin Central.

The contractors for the branch extension from Stevens Point to Portage have 100 men and 20 teams at work, besides a party of bridge-builders. This force is to be gradually increased. The first rail has been laid at Stevens Point.

Louisville, Paducah & Southwestern.

Mr. B. Du Pont, Receiver, reports to the Court his cash receipts and payments as follows for September:

Balance on hand Sept. 1.....	\$20,410 18
Receipts from agents.....	\$34,847 60
" conductors.....	962 55
" sundry individuals and companies.....	2,181 34
Total.....	\$58,401 67
Payments on audited vouchers and August pay-rolls.....	42,425 13
Balance on hand Oct. 1.....	\$15,976 54

The payments for the month were in excess of the receipts by \$4,433.64.

Indianapolis & Springfield.

Work was formally begun at Rockville, Ind., Oct. 19, the first dirt being thrown up by President Lee. Mr. Hill, one of the contractors, has a force at work there.

Vermont & Canada.

At the annual meeting in Bellows Falls, Vt., last week the President gave a history of the troubles of the Central Vermont for the past year. The sale of the road to the Central Vermont had not been completed, and it was not wise to take any further steps while the affairs of that company were in their present condition. As to the policy of the sale, there was an apparently irreconcilable difference in the board and the President could not recommend any active policy. The only course was to wait and watch, and it must depend entirely upon the result

of the pending Central Vermont suits what course should be taken. The proposed consolidation of all the lines embraced in the Vermont Central trust under the Central Vermont charter had completely failed. If the trust was to continue he believed that it was best to cancel the Rutland lease as soon as possible. Some discussion on the dissensions in the board followed. Two tickets for directors were nominated, one by President Nichols, the other by Mr. Brooks, who was President two years ago. The Nichols ticket was elected.

Winona & Southwestern.

Surveys of the line from Winona, Minn., to the Iowa line by way of Houston and the Money Creek Valley are being made by a party in charge of Mr. F. W. Kimball, formerly Assistant Chief Engineer of the Winona & St. Peter.

Augusta & Lewiston.

The line of six miles, from Westport, N. Y., to Whalburg, and which separated the two ends of the track, has been closed, and the last rail was laid Oct. 20. The road will soon be opened for business. It runs from Whitehall, N. Y., northward, following pretty closely the west shore of Lake Champlain, to Plattsburgh, and is about 90 miles long. It has been built and will be leased and worked by the Delaware & Hudson Canal Company.

Maine Central.

This company is building at Waterville, Me., a round-house with stalls for 48 engines; its diameter will be 388 feet. One-fourth of the circle, twelve stalls, will be finished in December. It will have a 50-foot wrought-iron turn-table from the works of the Kellogg Bridge Company. The company also contemplates building large blacksmith and machine shops at Waterville this winter.

Rutland.

The Vermont Chancery Court has adjourned to Nov. 16 the hearing on the application of the Rutland company for an order to vacate the lease of the road to the Central Vermont, and to restore it to the company. The hearing on the cross-bills filed by other parties in the case was adjourned to the same time.

Vermont Central.

The hearing of arguments on the accounts of the old trustees was resumed last week before the special masters in the case, at St. Albans, Vt. Counsel on both sides were heard and the case was continued until this week, when more arguments will be made.

Meetings.

The following companies will hold their annual meetings at the times and places given:

New Jersey Southern, at the office in Long Branch, N. J., Nov. 17, at 12 noon.

Baltimore & Ohio, at the office in Camden Station, Baltimore, Nov. 15, at 10 a. m. Transfer books will close Nov. 6 and reopen Nov. 16.

Rome, Watertown & Ogdensburg.

At a meeting of the directors of this company and also of those of the Syracuse & Northern Railroad Company, held Oct. 19, an agreement of consolidation of the two companies was effected under the name of the Rome, Watertown & Ogdensburg Railroad Company, to continue under the management of its present officers, as follows: Marcellus Massey, President; Talcott H. Camp, Vice-President; J. A. Lawyer, Secretary and Treasurer.

This increases the mileage of the Rome, Watertown & Ogdensburg road by the 45 miles of the Syracuse & Northern from Sandy Creek to Syracuse, and gives it a second southern terminus at Syracuse besides the former one at Rome.

Cairo & Vincennes.

The first transfer of cars from this road to the St. Louis, Iron Mountain & Southern road over the new incline and transfer ferry at Cairo was made Oct. 21.

are now suing out a new foreclosure. The demurrant had full notice when he took the stock of the complainants' mortgage and of their lien and rights. His attitude in the bill is that of a fraudulent trustee, inequitably seeking to convert the trust funds to his own use.

Dividends.

Dividends have been declared by the following companies:

- Baltimore & Ohio, Main Stem, 5 per cent., semi-annual, payable Nov. 1.
- Boston & Maine, 4 per cent., semi-annual, payable Nov. 15.
- Concord, 5 per cent., semi-annual, payable Nov. 1.
- Peterborough (leased by Boston & Lowell), 3 per cent., semi-annual, payable Oct. 20.

Port Wallace Branch.

Meetings have been held to advocate the construction of a railroad from Port Wallace, N. S., on Northumberland Straits, to the Intercolonial at Giles Valley and thence to the London-Derry Steel Works and Spencer's Point, on the Basin of Minas. The line will be about 26 miles long and it is desired to secure aid from the local Government.

St. Joseph & Denver City.

The Purchasing Committee have resolved to modify the agreement of reorganization so that the cost of the foreclosure and reorganization instead of being paid by a cash assessment upon subscribing bondholders will be made a preferred lien upon the road, to be included in the new first-mortgage, but to have a preference over all other bonds. This modification has been submitted for the approval of bondholders.

Keokuk & Des Moines.

The new river route, which has been under construction for some months, is now completed and ready for use. It is 11 miles long, leaving the old road at Buena Vista and following the course of the Des Moines River to Sand Prairie, where it rejoins the old road. The new road is substantially built, and is raised far enough above the river to make it safe from freshets. The average grade is only four feet to the mile, and by its use the company will dispense with the two long grades of 60 feet to the mile on the old line. There is one iron bridge of 120 feet clear span, built by the Watson Manufacturing Company, of Paterson, N. J. The contractor for the grading was Mr. Tim Ford, of Keokuk, Ia. The cost of the grading and bridging has been about \$80,000. The old line from Buena Vista to Sand Prairie will be abandoned and the track taken up.

Rock Island & Hennepin Canal.

The committee appointed at the Convention held some time since to consider the best means of securing an appropriation from Congress to build the canal has held several meetings in Chicago recently. A number of speeches were made, but no definite conclusions were arrived at.

Nashville & Decatur.

At a meeting held in Nashville recently the directors canceled and destroyed \$205,000 of Tennessee & Alabama mortgage bonds which have lately been paid off and retired.

Peoria, Pekin & Jacksonville.

A new brick round-house has been begun at Peoria, Ill. It is designed to hold 24 engines when entirely completed, but only one-fourth of the circle will be built at present.

Peoria & Springfield.

The freight house at Peoria, Ill., has been lengthened 80 feet in order to give much needed accommodation for the freight traffic. A new round-house with six stalls is also being built in Peoria.

Chesapeake & Ohio.

At the hearing in the foreclosure suit before the United States Circuit Court in Richmond, Va., Oct. 22, the answer of the company to the complaint was presented. It denies the charges of improper management and injudicious use of net earnings, sets forth the embarrassments which the managers have encountered, and states the fact that the company's counsel had under consideration a plan for settling the affairs of the company in a manner which would protect all interests. The answer concludes by praying that Gen. W. C. Wickham, Vice-President of the company, be appointed permanent receiver. Mr. McFarland, of New York, counsel for the trustees in the first Chesapeake & Ohio mortgage, together with the counsel for the trustees under second Chesapeake & Ohio mortgage, and for certain bondholders, all united in the prayer for Gen. Wickham's appointment. The State Attorney, Gen. Daniel, in behalf of the State, presented a petition, asking to be admitted as a party to the suit, claiming that the State was guarantor of \$1,000,000 of bonds of the old Virginia Central Railway, now the Chesapeake & Ohio, and was also a holder of \$2,000,000 of bonds and stocks. The State also claimed a forfeiture of the road to itself by reason of non-completion of the road as prescribed by law, and asked the appointment of Mr. Isaac H. Carrington, Receiver. Judge Bond took the papers under consideration, and promised to report his decision in three or four days. Pending the hearing to-day, a telegram from Mr. Bloodgood, of New York, to Judge Bond was read, protesting against the appointment of Gen. Wickham as Receiver, on account of his alleged mismanagement of the road while Vice-President.

Western North Carolina.

The stockholders have chosen Col. Sam. Tate Commissioner to act for them with the Commissioners appointed by the Governor, who are W. W. Rollins, of Madison County, W. G. Pearson, of Burke County, and Major Canady, of Wilmington. Under the law passed by the last Legislature of North Carolina, these commissioners are to manage and work the road and to complete it to Asheville and the Tennessee line. They have at their disposal all the convict labor of the State. The road has been formally surrendered to them by the Receiver, Major Smith.

United States & Mexican Telegraph.

The President and directors of this company having made a formal application to have the company dissolved, the New York Supreme Court has appointed Robert J. Livingston Receiver, to take charge of the company's property and wind up its affairs. He gives notice that all persons owing the company money, or holding any of its property, must pay or restore the same to him by Nov. 27, and all claims against it must be presented to him at the office of L. L. Delafield, No. 49 Exchange lace, New York, also by Nov. 27.

Erie.

The referee having reported the Receiver's accounts as correct, the Court ordered them to be sent back to the referee again until argument could be had on a question involved. It is understood that the point in doubt is whether a strict compliance with the law will not require the referee to examine personally every voucher. This, if required, will throw upon the referee an immense amount of very tedious work.

The Port Jervis (N. Y.) *Gazette* says: "Important changes with regard to the running of passenger trains on the Delaware and Susquehanna divisions of the Erie Railway will be inaugurated during the coming month. Passenger trains, combining mail and express matter, have heretofore been run by divisions only, but it is now proposed by the managers of the road to alter the programme, and make this new departure one benefit to the traveling public and all concerned."

In the 1st of November, trains 1, 4, 5 and 8 will commence

running between Port Jervis and Oswego, with same conductor and train men, and trains 3 and 12 between Port Jervis and Elmira, same as above, returning in the same order, all of which to be designated as *through trains*. Trains 6 and 29 are considered as minor ones, and will continue to be run as before, by divisions. The rotation plan, first in, first out, will be totally ignored, each train having its separate conductor and gang of men. The proposed change is not altogether a new idea, as the same plan was in vogue some years since."

Pittsburgh, Fort Wayne & Chicago Railway Mutual Benefit Association.

The annual convention was held at Crestline, O., Oct. 21. A large delegation of members were present from Pittsburgh, Newcastle, Alliance, Fort Wayne, Chicago, and other points on the line of the railroad, representing 36 divisions of the association. The address of the President and reports of General Secretary and Treasurer showed a very prosperous condition of the association. The proceedings of the convention occupied the afternoon, and were harmonious throughout. After re-electing the old officers, the convention adjourned to meet in the same place next October.

Chicago & Pacific.

R. M. Hough, who was perhaps the most active projector of the road, has begun suit against this company, Thomas S. Dobbins and others to recover his alleged share in the profits resulting from the building of the road. He asks for the appointment of a receiver and a general accounting.

Burlington & Southwestern.

The compromise agreed upon by the parties in interest, by which General Baker, the Receiver appointed by the United States Court, and Mr. McKitterick, the Receiver appointed by the Iowa Court, were both to retire, has been carried out. The United States Circuit Court has appointed Mr. Elijah Smith, President of the company, Receiver, and Mr. McKitterick, who has been in possession, has turned over the property to him. Mr. Smith is said to represent the bondholders, and it is also said that they will at once advance the money to complete the gap between the northern end of the road at Unionville, Mo., and the southern end at Acornville. This distance is about 30 miles, which is all or nearly all graded, and some track is laid from Unionville southward.

Pacific, of Missouri.

The committee appointed by the stockholders held last week several conferences with the officers of the Atlantic & Pacific Company. The following statement of earnings of the road for $9\frac{1}{4}$ months, from Jan. 1 to Oct. 14, was submitted:

	1875.	1874.	Decrease.	P. c.
Freight.....	\$1,287,236	\$1,824,760	\$637,524	29.5
Passenger.....	831,875	897,096	65,211	7.3
Other sources.....	136,766	137,018	252	0.2
Totals.....	\$2,255,877	\$2,858,874	\$602,997	21.1

During the same time the earnings of the lessee from its own road were \$974,518, a decrease of \$73,634, or 7 per cent., from 1874. The decrease is attributed largely to failure of crops from grasshoppers and other causes.

The conference committee reported to an adjourned stockholders' meeting in New York Oct. 25. The report says that during the three years and three months of the lease the rental charges have exceeded the net income of the Missouri Pacific by \$474,712.13, not including the dividend now in default, and \$200,000 taxes due and unpaid. During the same period the lessee has paid for floating debt of leased lines, taxes due at time of lease, construction of the Carondelet Branch and other leased lines, together with permanent improvement of main line with steel rails, iron bridges and new machine shops, including interest on floating indebtedness, the sum of \$8,837,506.92; for which it has received from transportation accounts and miscellaneous sources (prior to June 29, 1872) \$741,908.40; and from the sale of \$500,000 Carondelet Branch bonds, \$1,500,000 income bonds, and \$646,000 third-mortgage bonds, the sum of \$1,788,371.23, making a total of \$2,530,279.63, which leaves a balance still due Atlantic & Pacific Railroad Company of \$1,297,227.29, they holding for same \$1,854,000 unissued third-mortgage bonds, and about \$100,000 of Carondelet Ferry stocks. The whole embarrassments of the company have arisen from the falling off of earnings during the last year.

The committee recommend that stockholders take the \$1,854,000 unissued third-mortgage bonds at 75. In that case the floating debt could be retired, and by the stockholders foregoing their rental for a few years, they have no doubt that, with proper management, the future growth of business on the road will in time make their stock of value; otherwise the third-mortgage bondholders (the most of whom are floating debt creditors) may ask for their rights, and in that case take the property. In any event, they recommend that, if the leases of the several branches (excepting, perhaps, the Carondelet) cannot be cancelled, they be so modified as not to prove a loss to the company in operating them.

After a long discussion it was resolved that a committee of bondholders and stockholders of the road should be appointed to agree upon a plan for the reorganization of their interests, and come to a proper understanding as to how far their interests assimilated.

Prince Edward's Island.

This road now has $19\frac{1}{2}$ miles of main line and branches, and is running one through train each way daily over the main line, besides six local trains. The grain business just at present requires the entire equipment; this press of traffic lasts about six weeks. Orders have been given to build in the shops this winter 50 flat, 50 box and 6 conductors' cars, besides which about 50 box cars will be ordered at outside shops.

There is considerable agitation in the island just now on the subject of branches to various coast towns and villages not on the line. The Government is called on to build a branch 11 miles long to Cape Traverse, one 20 miles long to Murray Harbor, and another 18 miles long to Belfast, all thriving coast towns but having no connection with the road, which was especially designed to serve the interior districts of the island.

Pittsburgh, Washington & Baltimore.

Previous to Oct. 1, all the oil shipped from Pittsburgh east by this road was either brought to it by teams or by boats, an elevator having been built purposely to accommodate the latter shipments. Since Oct. 1, however, an arrangement has been made by which this company delivers its cars to the Pennsylvania at Brinton's, outside of Pittsburgh, and that company hauls them to the refineries, most of which are on the line of the Allegheny Valley road in and near Pittsburgh. The cars are there loaded direct from the refinery, and returned to the Baltimore road by the same route. The Pennsylvania receives \$5 per car for hauling from Brinton's to Pittsburgh and back.

St. Louis, Kansas City & Northern.

The St. Louis County Court has granted this company permission to extend its tracks to the Union depot and the bridge on the route chosen upon certain conditions. The work must be begun by Nov. 1 and steadily prosecuted until it is completed. No more obstruction must be made to highway travel than is absolutely necessary in the work of construction. The company must pave and keep in order that part of any street which may be occupied by its tracks and 10 feet on each side. It must change the grade of its track when necessary to conform to a change in any street crossed and must agree to build bridges over its track for any street that may hereafter be laid out to cross it. The track must be laid so as to pass under

King's highway, Cass avenue, Duncan avenue, Barnes avenue, St. Charles Rock road, Natural Bridge road, and over Manchester road and Florissant road. All the work must be done under the supervision of the County Engineer, and the company must file its acceptance of these conditions within 30 days from Oct. 19.

The line chosen leaves the main line at Ferguson station, crosses to Forest Park, and then follows the line of the St. Louis County Railroad to the Union depot.

Intercolonial.

The gap of 25 miles between Fraser's and the Forks of Meta pediac has been closed and the line is now complete from Moncton, N. B., where it leaves the Halifax & St. John line, to Riviere du Loup, P. Q., where it meets the Riviere du Loup Division of the Grand Trunk. Mr. Brydges and other officers of the road passed through over its whole length last week. The formal opening will not take place nor will regular trains run through for some time yet, but trains will begin running from Moncton as far as Campbellton on the Restigouche, at the northern boundary of New Brunswick, early in November.

Little Rock & Fort Smith.

A Little Rock dispatch says that a contract has been let for the completion of the 45 miles of road from the present terminus at Altus, Ark., to Fort Smith. The recent sale of bonds by auction in Boston has supplied the company with the funds necessary to do this work, which must be completed by next Spring to save the land grant.

New Jersey Midland.

The bondholders held their adjourned meeting in New York Oct. 21, and out of the three schemes before them, voted to adopt the Balestier plan with some slight modifications. This provides for a foreclosure, the formation of a new company and the issue of five classes of securities, as follows:

1. A first mortgage of \$500,000, the proceeds to be used for putting the road in good order and equipping it; the right to be reserved to issue an additional \$500,000 to provide terminal facilities.

2. New bonds for \$3,000,000 to be exchanged for the present first mortgage, with coupons cut off up to Feb. 1, 1879.

3. Stock to be exchanged for the coupons of the first mortgage, already over-due, and those of the new bonds which will become due up to 1879.

4. Income bonds to be exchanged for the second-mortgage bonds and unpaid coupons, to draw interest only after dividends have been paid on the stock.

5. Scrip No. 1 to be issued for the third-mortgage bonds and floating debt; to draw interest after the income bonds.

6. Scrip No. 2 to be issued for 40 per cent. in amount of the present capital stock, to draw interest only after No. 1.

Bondholders are requested to deposit their bonds with the Central Trust Company of New York before Dec. 1, with an assessment of 0% per cent. to pay legal expenses.

Louisville, Cincinnati & Lexington.

The earnings and expenses of this road for the month of August are reported by the Auditor, Mr. Wm. Mahl, as follows:

Receipts from passengers.....	\$43,373 77
" " freight.....	43,985 47
" " express, mail, etc.....	6,522 30
Total earnings.....	\$93,881 54
Operating expenses (75.65 per cent.).....	71,293 67
Net earnings.....	\$22,587 97
Rentals and guarantees.....	\$4,989 55
State tax.....	1,451 25
Construction and other expenses.....	281 65
	6,722 45

Net profits subject to the order of the Court..... \$15,865 52

In the statement of the Receiver's report given in the *Railroad Gazette* of Oct. 16 an error caused the statement to read that the expenditures were \$53,359.81 in excess of the receipts, when the reverse was the case, as, indeed, could be readily seen by the figures given.

Chicago, Burlington & Quincy.

The following statement of the earnings for the first eight months of the current year has been published:

	1875.	1874.	Inc. or Dec.	P. c.
January.....	\$860,944 52	\$870,724 99	Dec. \$9,780 47	1.1
February.....	764,163 29	755,325 61	Inc. 8,837 68	1.2
March.....	920,922 63	891,858 22	Inc. 29,064 41	3.3
April.....	979,560 45	946,125 49	Inc. 33,434 96	3.5
May.....	989,084 56	1,004,892 93	Dec. 15,608 37	1.6
June.....	945,104 97	1,060,262 87	Dec. 112,163 90	10.6
July.....	943,462 78	884,013 30	Inc. 59,449 48	6.7
August.....	1,066,366 86	1,161,356 58	Dec. 94,989 72	8.2
Totals.....	\$7,472,610 06	\$7,574,365 99	Dec. \$101,755 93	1.3

The slight increase of the first five months was much more than overcome by the falling off in the three months of heaviest traffic. The statement is, however, a very favorable one.

Cairo & St. Louis.

The operations for the month of August are reported as follows:

Gross earnings (\$172 per mile).....	\$25,080 33
Working expenses (78.18 per cent.).....	19,608 78

Net earnings (\$37 per mile)..... \$5,471 55

Extraordinary expenses, rentals, etc..... 2,511 66

Net profit..... \$2,959 89

The mileage of passenger trains was 10,426 miles; freight, 7,618; coal, 8,994; total 27,038 miles. The average receipts per passenger train mile were \$0.7253; per freight train mile, \$1.1988; per coal train mile, \$0.9321.

Trains are now running through to Cairo, and there is no present danger to the embankment and levee north of that city.

Kansas City, St. Joseph & Council Bluffs.

On appeal from the decision of the lower court, the Iowa Supreme Court has dissolved the injunction prohibiting the company from running its trains through to Omaha over the Missouri River bridge, and ordering it to comply with the act of the Iowa Legislature which requires a transfer at Council Bluffs. The Court holds that this act of the Legislature is void, as it operates to impede commerce between the States and therefore conflicts with the constitution of the United States

difficulties if the Government would give it \$750,000 of its 5 per cent. bonds, which are marketable, for the same amount of a proposed issue of the company's second mortgage 6 per cent. bonds, which could not now be sold at all. The President complained that the Government subsidized too many lines covering the same ground as his road.

A meeting of the first consolidated mortgage bondholders was held in Dundee, Scotland, Oct. 5, to consider what course should be adopted to compel payment of the coupons; Mr. O. G. Miller was called to the chair. Councillor Moncur submitted the following resolutions: "That this meeting, having regard to the report of date Sept. 18 ult., issued by Sir Edward Watkin on the affairs of the Erie Railway, specially having regard to the 10th article thereof, wherein he recommends what he terms the policy of self-redemption, considers that any proposals which do not include a cash payment out of the earnings of the interest due to first-mortgage bondholders, already amply secured creditors, would not be self-redemption, but a sacrifice on the part of the first-mortgage bondholders in order to preserve the interest of the stockbrokers, and should therefore receive the unqualified opposition of the bondholders." Mr. William Harris seconded the resolution, which was carried. Mr. Robert Fleming moved the next resolution: "That the coupons due 1st September be sent to New York for presentation and protest in event of non-payment, and that a report of this meeting, with a copy of the resolutions passed thereat, be forwarded through a suitable channel to the Farmers' Loan & Trust Company, trustees under the mortgage." It was passed. It is said that at this meeting \$1,000,000 out of the total issue of \$2,500,000 of first-mortgage bonds were represented.

Great Western of Canada.

At the close of the adjourned half-yearly meeting, which was held in London, England, Nov. 11, a special meeting will be held for the purpose of voting on the questions of reducing the number of directors and of authorizing an arrangement with the Grand Trunk for the regulation, interchange and division of the traffic between certain points, and the necessary measures to carry such agreement into effect.

Central, of Minnesota.

The work on the extension from Albert Lea, Minn., southeast to the Central of Iowa at Northwood, Ia., has been begun and is to be pushed as fast as possible. The distance is about 20 miles and Col. De Graff, of St. Paul, is the contractor. The Central trains will, when this section is complete, use the Southern Minnesota track from Wells to Albert Lea.

Bakersfield & San Luis Obispo.

It is proposed to build a narrow-gauge railroad from Bakersfield, Cal., in the San Joaquin Valley, to the Pacific coast at San Luis Obispo, a distance of about 125 miles.

Visalia Branch.

There is talk of extending this road from Visalia, Cal., to Porterville and Grangeville, new and thriving towns.

North Pacific Coast.

The surveyors have begun the location of the proposed branch line from Austin Creek, Cal., to Guerneville. A branch from Fulton to the same place is now under construction by the San Francisco & North Pacific Company.

Union Pacific.

Notice is given that John Duff and Fred. L. Ames, trustees, will receive at their office, No. 38 Sears Building, Boston, up to noon of Nov. 4, sealed proposals for the sale to them of \$50,000 land grant bonds of the company, in accordance with the terms of the mortgage.

Strasburg.

This road has been sold to Henry Baumgardner, of Lancaster, Pa., and W. F. Lockard, Superintendent of the Middle Division of the Pennsylvania Railroad, for \$11,725. It is three miles long, from the Pennsylvania at Leaman Place, in Lancaster County, southwest to the village of Strasburg.

Los Angeles & Independence.

The track is now laid from the new port of Santa Monica, Cal., eastward to Los Angeles, 15 miles. That section of the road was to be opened to travel about Oct. 17. It will give Los Angeles a new connection with tide water, and a new port, where large wharves are being built.

Delaware & Bound Brook.

Attorney General Vanatta has filed information in the form of a bill in the Court of Chancery of New Jersey on behalf of the State for the purpose of procuring an injunction to compel this company to stop the building of its bridge over the Delaware at Yardleyville. The information was filed last week, and the Chancellor issued the customary order for the defendant to appear and show cause why the injunction should not be granted. The hearing was set down for Oct. 26.

Atchison & Nebraska.

The railroad subsidy election in Saunders County, Neb., resulted in favor of a subscription of \$140,000 in county bonds to the extension of this road from Lincoln to Fremont. Fifteen precincts voted for local bonds to the amount of \$90,000 in aid of the projected narrow-gauge line from Omaha westward. Polk County has voted \$70,000 to the latter road. An election was to be held in Butler County Oct. 26, and one will take place in Hamilton County shortly.

The Osage Ceded Lands.

The appeals of the Leavenworth, Lawrence & Galveston and the Missouri, Kansas & Texas companies from the decision of the Circuit Court in favor of the settlers on these lands were argued before the United States Supreme Court Oct. 20. The companies seek to establish a claim to compensation from the settlers who have located claims on these lands, on the ground that they are included in the railroad grants.

Burlington, Monmouth & Illinois River.

A company by this name has been organized to build a narrow-gauge road from Burlington, Ia., east to Monmouth, Ill., and thence east by south to Heyworth, where it will connect with the Havana, Rantoul & Eastern road. The projected new line would be about 120 miles long and for its entire length parallel to and nowhere very far from some existing line.

Paducah & Memphis.

The United States District Court has made a supplementary order authorizing the Receiver of this road to appoint or discharge any officer of the road other than the President and Secretary of the company.

Augusta & Lewiston.

Surveys are now being made for this proposed new line from Augusta, Me., to Lewiston. It is said that a very easy line has been found.

Boston & New York Air Line.

The new company is making extensive improvements in the road. Two trains are at work ballasting the road and a large force is employed in ditching the road-bed, widening cuts and filling and clearing away loose stones from the numerous rock cuts. The company has ordered 300 tons of new rails, which are needed for renewals at once, as well as a large number of new ties. A contract has been let to N. C. Munson, of Boston, to fill up all the wooden trestles except those at Cobalt and East Hampton, which will be replaced by iron. The equip-

ment is to be increased by four engines, two baggage, two mail and smoking, four passenger and 100 freight cars, which are now under construction.

Kansas City, Burlington & Santa Fe.

Mr. A. C. Titus, Chief Engineer, writes that the location of 13 miles of this road was commenced in July, connecting with the Leavenworth, Lawrence and Galveston three miles south of Ottawa, Kan., and running thence southwest to Williamsburg, where there is a large deposit of coal of a superior quality. The grading was completed Oct. 1, and tracklaying commenced the following week. Already examinations and preliminary surveys are in progress for a continuation of the line to Burlington on the Neosho River, 27 miles southwest of Williamsburg.

Chicago & Lake Huron.

This company is laying track from the crossing of the Flint & Pere Marquette at Flint, Mich., across the Flint River and out to the westward. Enough track is to be laid to enable the construction train to assist in the work at the heavy cuts west of Flint. Work is to be pushed steadily through the winter.

Utah Northern.

The work on the extension from Franklin, Idaho, northward is progressing steadily. Mr. L. H. Hatch, the bridge contractor, has nearly finished the bridge over Cub River and Mr. Morrison, of Laramie, has the Bear River tunnel well advanced. Mr. Thurston, of New York, has the contract for a cutting and the heavy fill in Cub River bottom; W. L. Hendricks has 12 miles from Cub to Bear River, and Joseph Nelson has the grading north of the tunnel. Biggs & Steers have the contract for ties and are turning them out faster than they can be used.

St. Louis, Kansas City & Northern.

Reports are current of a consolidation of interests and management of this road and the Kansas Pacific, under the control of Mr. Robert E. Carr as President. The arrangement is said to have been made by Jay Gould and its object to be to form a through line from St. Louis to San Francisco by way of Kansas City, Denver and Cheyenne. These rumors appear doubtful.

Blue Ridge.

An effort is being made to secure the completion of this road according to the original design. Meetings have been held in the hill country of South Carolina, and a convention will be held at Walhalla, S. C., Nov. 2, to consider the question. The road is now completed from Anderson, S. C., to Walhalla, 43 miles, and a good deal of very costly work on tunnels and grading has been done beyond Walhalla.

St. John's, Lake Eustis & Gulf.

Work has been begun on this Florida road, and the grading is to be completed in a year. The road is intended to connect St. John's, Fla., with the navigable waters of the St. John's River.

Green Lick.

This road has been completed and was opened for traffic last week. It is of 3-foot gauge and runs from the Southwest Pennsylvania at Scottsdale, Pa., to the Mount Vernon Ore Bank, a distance of three miles. It is intended to carry iron ore mainly and cost about \$30,000. Mr. Julius Shipley, of Uniontown, Pa., was Engineer, and Wm. White, of Scottsdale, contractor.

Colorado Central.

At a meeting of stockholders and of tax-payers of the county held in Central City, Col., Oct. 11, on call of the county commissioners, a statement was presented showing that the company's bonded debt was \$1,230,000 and the floating debt \$1,300,000. Much surprise was expressed at the amount of floating debt, as it had been supposed that that debt was small in amount, and that the funded debt was the only heavy outstanding liability. After considerable discussion it was resolved that the vote of the county stock should be cast against the proposed consolidation with the Kansas Pacific.

Cincinnati Southern.

On application of the trustees the Ohio Supreme Court has issued an alternative writ of *mandamus*, ordering the Auditor of Hamilton County to put upon the tax duplicate the tax levied in Cincinnati to pay interest on the Southern Railroad bonds, or to appear before the Court, Oct. 26, and show cause why it should not be done.

Central, of Iowa.

A later dispatch says that in the United States Circuit Court at Des Moines, Ia., Oct. 20, in the suit of the Farmers' Loan & Trust Company, trustee, a decree of foreclosure was made in a form satisfactory to a majority of the bondholders.

European & North American.

A meeting of the consolidated bondholders was held in Bangor, Me., Oct. 18. It was stated that the land-grant bonds are largely held by savings banks and trustees, and that these holders did not feel at liberty to assent to any proposition which would impair the security of their bonds or give precedence to other claimants. It was resolved that all the net earnings, after paying for necessary renewals, should be used to pay interest on the bonds in the order of their priority. A proposition that the trustees under the consolidated mortgage should take possession and run the road, with an advisory committee of land-grant bondholders, was favorably received, but was finally postponed, and a committee appointed to consult with the directors and report to an adjourned meeting. The creditors' proposition evidently met with no favor. The committee met with the board of directors the same evening. At the conference it was agreed that the road be placed in the hands of the trustees of the consolidated mortgage bonds; that the land-grant bondholders refrain from foreclosure; that enough over-due and accruing coupons be funded for ten years to prevent the sacrifice of property; that measures be taken to provide for \$100,000 in notes due on the Piscataquis Branch, and that the coupons on the Bangor City bonds be paid in full.

A proposition has been made in the Bangor City Council to foreclose the first mortgage for \$1,000,000 on the road held by the city. It was laid over for further consideration.

Attleborough & Providence.

Surveys have been made for this proposed road, and a company is to be organized. The road will be 15½ miles long, from Attleborough, Mass., to the Providence & Worcester near Pawtucket. It will give the Boston, Clinton & Fitchburg a new connection with Providence.

Atlantic, Mississippi & Ohio.

President Mahone has gone to England for the purpose of conferring with the holders of the consolidated bonds. It is said that he will try to arrange with them to accept one-half the interest for a time, as the earnings of the road at present are not sufficient to pay it in full.

St. Paul & Pacific.

Several Dutch financial journals pronounced against the proposed plan of arrangement with the company, and Dr. A. W. de Klerck, who has visited the road, issued a pamphlet in opposition, reflecting against Litchfield, supposed to be the chief stockholder. The chief cause of opposition assigned was that there would be a new first-mortgage, and that the Main Line bondholders (known as Second Section, loan of 1869,) would receive but \$250 for each \$1,000 second-mortgage bond.

At the meeting Oct. 4 holders of less than one-fifth of the certificates were present, while one-half must consent to make any arrangement binding. A majority of the Branch Line bondholders favored the agreement. No agreement could be made as to the Main Line, and the meeting became disorderly. Finally it was resolved that the three largest holders of the loan of 1869—Mr. T. Hoot, Mr. Knotenbelt and Dr. A. W. de Klerck—be appointed a committee to make new proposals concerning the loans of \$3,000,000 (Second Section) and \$9,000,000. They were to report to an adjourned meeting of the bondholders Oct. 11. This committee, in opposition to the views of Dr. de Klerck, who writes to us of the affair, reported in favor of adding \$50 to the amount of second-mortgage bonds to be issued for every \$1,000 of the 1869 loan, and of taking \$100 from the amount paid the holders of the \$3,000,000 loan. This gives \$300 to the "second-section" bonds. This proposal was probably adopted.

ANNUAL REPORTS.

Western Maryland.

This company owns and works a line from Baltimore west by north to Williamsport, Md., 90 miles.

The property is represented as follows:

Stock (\$7,592 per mile).....	\$685,243
Funded debt (\$40,833 per mile).....	3,675,000

Total (\$48,425 per mile)..... \$4,358,243

Of the bonds, \$1,375,000 have been indorsed or guaranteed by the city of Baltimore and \$300,000 by Washington County, Md. Baltimore also holds the entire issue of \$1,000,000 fourth-mortgage bonds, and is a creditor of the company to a large amount for coupons paid by the city. A foreclosure suit was recently begun by holders of second preferred bonds.

The earnings of the road for the year ending Sept. 30 were as follows:

	1874-'75.	1873-'74.	Inc. or Dec.	P.c.
From passengers.....	\$129,864 25	\$131,028 04	Inc. .	\$8,836 81 6.7
Freight.....	131,510 81	139,380 74	Dec..	7,869 93 5.6
Other sources.....	22,342 38	7,383 46	Inc. .	14,958 92 202.6

	1874-'75.	1873-'74.	Increase.	P.c.
Working expenses.....	194,420 02	194,442 38	Dec..	22 36
Net earnings.....	\$99,208 02	\$83,349 86	Inc. .	\$15,948 16 19.1
Gross earn. per mile.....	3,263 53	3,086 58	Inc. .	176 95 5.7
Net " "	1,103 31	926 11	Inc. .	177 20 19.1
Percent of expenses.....	66.10	70.00	Dec..	3.81 5.4

Continued depression of business and unfavorable weather during the season of pleasure travel decreased the earnings considerably. The passenger and freight traffic was as follows:

	1874-'75.	1873-'74.	Increase.	P.c.
Passengers carried.....	309,425	295,572	53,859	21.1
Tons freight moved.....	106,798	90,830	15,968	17.6

Besides the ordinary expenses there was paid out for new equipment, new sidings and other permanent improvements of road and machinery the sum of \$64,866.82. The Emmitsburg Railroad, now nearly completed, will be worked by this company, and is expected to be a feeder of some value. The new road is laid with the light rails taken up from the Western Maryland between Hagerstown and Williamsport, which have been sold to the Emmitsburg company. A branch, 8½ miles long, to Waynesboro, Pa., is talked of and will probably be built next year.

The summer travel over the road has become large and profitable and will doubtless increase as better hotel accommodations are provided along the line of the road. The lease of Greenwood Park as a picnic resort has proved remunerative. The coal traffic from the canal at Williamsport is increasing and additional equipment for that traffic will soon have to be provided.

The contract with the Northern Central for the use of its tracks and tunnel in Baltimore and the agreement by which the city is building a new depot for the road in Baltimore, both of which matters have been referred to heretofore, are explained. The report closes by urging the advantages of the proposed extension to Johnstown, Pa., which will make a line from Baltimore to Pittsburgh 24½ miles long, 84 miles shorter than the Baltimore & Ohio and 88 miles shorter than the Northern Central and Pennsylvania. The extension will also open the George's Creek and Salisbury coal basins, and will bring a coal supply to Baltimore by the shortest possible line.

Newport & Wickford.

This company owns a branch of the New York, Providence & Boston road, from Wickford, Junction to Wickford, 3.3 miles, and it runs a steamboat line from Wickford to Newport.

The capital account consists of \$101,000 stock, \$50,000 first and \$20,000 second-mortgage bonds. The cost of the road and equipment is stated at \$125,964.60 and of the steamboat *Melusina* at \$42,130.78.

The earnings for the year ending August 30 were:

From passengers.....	\$37,207 05
Freight.....	2,438 83
Mails and miscellaneous.....	6,313 90
Total.....	\$45,959 78
Current working expenses.....	\$33,016 81
Repairs of road and boat.....	7,701 83
Total.....	40,518 34
Net earnings.....	\$5,441 44
Loans made.....	8,000 00
Total.....	\$13,441 44
Interest paid and construction account.....	13,008 87
Deficiency.....	\$ 467 43

The expenses and repairs were 88.16 per cent. of receipts. The whole number of passengers carried was 61,994, of whom 24,909 were steamboat passengers.

October Meeting of the Car-Builders' Association.

The regular monthly meeting of this Association was held at the rooms No. 113 Liberty street, New York, Thursday evening, Oct. 21. The subject selected for discussion was the manufacture and endurance of car wheels. An invitation had been sent to manufacturers of wheels to present written communications on the subject, but as no response was made to this invitation, the President, Mr. Leander Garey, called on Mr. M. N. Forney, of the *Railroad Gazette*, to "say something."

Mr. Forney said that, in a recent visit to Wilmington, Del., he had seen a pair of chilled cast-iron truck wheels which had been turned off by the Lobdell Car-Wheel Company and were now in use under an engine on the Philadelphia, Wilmington &

which made it necessary to remove it. It then occurred to him to try the experiment of turning off the pair of wheels, as the manufacture and turning of chilled rolls has for a long time been a part of his firm's business, and Mr. Hodgeman agreed to put them under an engine. They were 26 inches in diameter, and he thought about 3-16 of an inch was turned off, so that their diameters were reduced about $\frac{1}{16}$ of an inch. The tool used was a sort of scraper the full width of the tread of the wheel, and was made of ordinary tool steel hardened by a patented process, of which their company had bought the secret and right to use. In turning the wheel it is necessary to run the lathe very slowly, and considerably more power is required to do it than for turning off a steel wheel. His appliances for doing this work were very imperfect, but with them it took from one to two days to turn off one wheel. The pair of wheels turned were now in use in the back end of an engine truck, the front wheels of which have steel tires welded to a cast-iron center on the Saxe & Kean plan. These latter were also turned. The engine has now run about 11,000 miles with these wheels, and up to the present time the steel wheels have shown the most wear. The cast-iron wheels have worn perfectly smooth, with hardly any apparent wear. In turning them the "spot" referred to was not entirely turned out, and he had watched carefully to see whether it had increased in size, and found that it had not; but the marks which remained after being turned had almost entirely disappeared.

Mr. Partridge stated that he had seen a "cushioned" cast-iron wheel which had been ground true with an emery wheel.

Mr. Forney asked whether an emery wheel would cut enough to true up cast-iron car wheels, which were often from $\frac{1}{8}$ to 3-16 of an inch out of true.

Mr. Partridge did not know how much an emery wheel would cut.

Mr. Lobdell said grinding up chilled rolls was an extremely slow process.

Mr. Forney inquired of Mr. Lobdell what was the cost of turning a chilled wheel.

Mr. Lobdell said, including a fair charge for use of machinery and tools, about \$7.50. The labor was done by a boy, to whom they paid from \$6 to \$7 per week. With the right kind of lathe, he had no doubt it could be done at a very much less cost.

Mr. Forney thought that it then became a very simple problem in "single rule of three" to determine how far a pair of wheels must run after being turned to pay for the cost of turning. If a new pair of 26-inch wheels costs \$15, and when worn 50,000 miles without turning, and can be sold for \$5 when worn out, then the cost for that number of miles' service is \$10. Therefore, if it costs \$7.50 to turn a wheel after it has made that mileage, it ought, in order to pay, to run three-fourths of 50,000 or 37,500 miles, or:

\$7.50 : \$10 : 50,000 : 37,500.

He doubted, however, whether the average mileage of wheels was as much as 50,000 miles. Of course, if we can establish the average mileage of wheels before turning and after, and the cost of turning, it will be a very easy matter to calculate whether it will be profitable to turn wheels.

Mr. W. E. Chamberlain, of the Boston & Albany Railroad, thought that there would be very little chill left after a wheel had run 50,000 miles, as the tread of a wheel would be worn about $\frac{1}{8}$ in. deep after running that distance.

Mr. Lobdell said the wear would depend very much on the character of the chill.

Mr. Chamberlain remarked that in any experiments or in keeping an account of the service of wheels, it ought to be based on actual and not estimated mileage, as the latter was frequently very erroneous and misleading.

Mr. Davenport thought that the defects complained of in cast-iron wheels were not all due to the wheel-makers, but that if master car-builders would be more careful in fitting up their work the wheels would do better. The axles of a truck were often not parallel, and he had seen a case in which one wheel of a truck had been worn unduly, and on examination he found that in putting them on the axle one wheel, which had been numbered 4 by the maker, had been pressed on the same axle with a No. 6 wheel; and he had seen another case in which the difference in diameter of a pair of wheels on the same axle was $\frac{1}{16}$ in.

Mr. Chamberlain would warrant that if one wheel was $\frac{1}{16}$ in. larger than the other on the same axle the flanges would be worn out in running 16,000 miles.

Mr. Garey said wheels were often not accurately matched by the manufacturers.

Mr. Chamberlain wanted to know why wheels were made so much better now than they were a year or more ago.

Mr. S. A. Hodgeman, of the Philadelphia, Wilmington & Baltimore Railroad, suggested that one reason was that wheelmakers had more time now to do it.

Mr. Whitney, of A. Whitney & Sons, Philadelphia, was glad to hear what Mr. Lobdell had said, and thought that it was very valuable information and would probably enable us to learn more about the "spots" in wheels.

Mr. Chamberlain inquired why it was possible to make wheels which will run 105,000 miles, while others made of the same metal and at the same time run only 16,000.

Mr. W. S. G. Baker, President of the Baltimore Car-Wheel Company, said it was due to the temperature at which the iron was poured, and that if railroad companies would pay more for the risk of chill-cracks, they could get better wheels. He had poured iron very hot, which made very good chills, but he lost 50 percent more wheels from chill-cracks than he did when the iron was poured colder. Wheel-makers can make good wheels with sufficient chill if the iron is poured hot.

Mr. Davenport was glad that the car-builders had led manufacturers to make better wheels. Some of the latter have established laboratories to test the materials of which their wheels were made. This, he thought, was a healthy sign. He believed in cast-iron wheels. He had seen a specimen of cast iron which required a strain equivalent to 41,550 lbs. of tension to break it, and had been twisted in one of Professor Thurston's testing machines 15 degrees before it broke. The combination of science with practice was leading manufacturers to make better wheels. The cause of the difference in the qualities of wheels made of the same materials and apparently under the same conditions was difficult to find out. Wheel-makers were obliged to depend upon their employees who were not infallible.

Mr. W. W. Snow, Superintendent of the Ramapo Works, said that the wear of wheel flanges was to a very great extent due to the form of rails. Formerly the edges of the rails were rounded, the radius of the curve of which was about the same as that which joined the tread with the flange of the wheel. Recently, however, this radius had been reduced, in order to get more bearing surface on the top of the head of the rail.

Mr. Forney suggested that the forms of rails and of the flanges of wheels had been designed independently of each other, and he did not think it was at all certain that the forms in use were those best adapted to each other.

Mr. Garey inquired why the depth of the chill in wheels often varied, being deeper on one side of the wheel than on the other.

Mr. Baker said it was due to the temperature at which the iron was poured.

Mr. Chamberlain thought that there was some temperature at which iron should be poured which, under all the circumstances, was better than any other, and that it was the business of the wheel-makers to find out what that temperature was.

Mr. Snow said that this subject has attracted more attention from wheel-makers than any other, and that iron and other fluids would flow in some one direction until the flow is arrested. The same thing occurs in pouring the molten iron for

LOCOMOTIVE RETURNS, JULY, 1875.

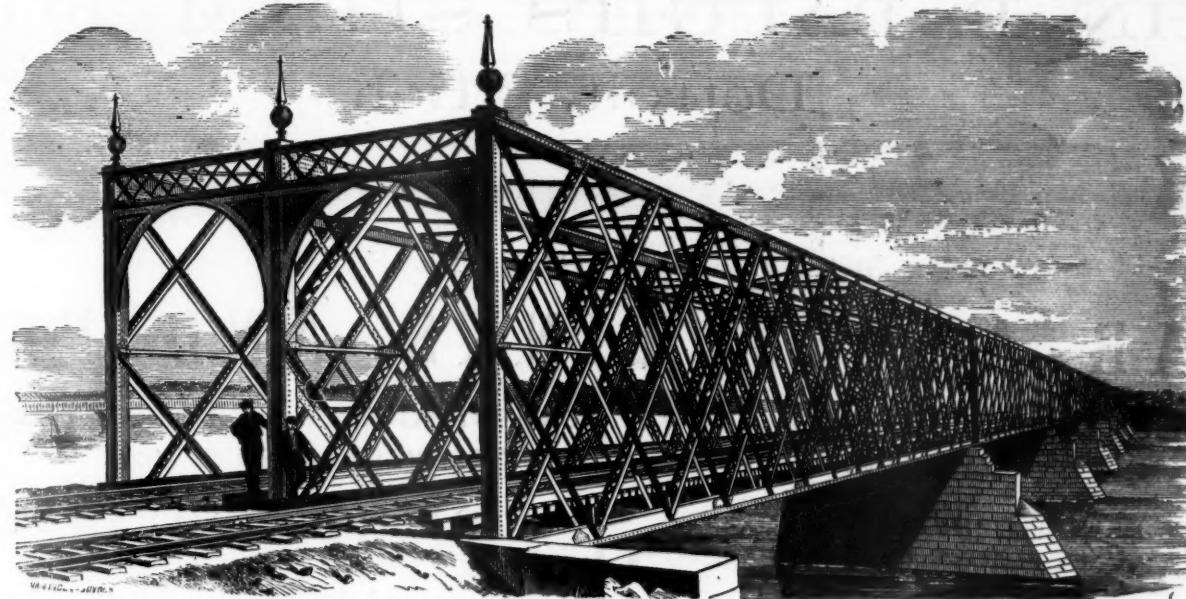
Master Mechanics of all American railroads are invited to send us their monthly reports for this table.

NAME OF ROAD.	Mileage Number of wheels in service.....	Average per line.....	No. Miles run to average No. of cars hauled.....	Cost per Mile in Cents for Repairs.....	Wood, per cord... Coal per ton or barrel... Gas... Engines, firemen and wipers.....	Total.....	Av. c't of Wool, per cord... Oil per ton or barrel... Gas... Engines, firemen and wipers.....		
Allegheny Valley.	259	81	254,147 3,138	18.34	3.34 5.59 0.54	6.13 16.19	2.24 3.17		
Atlantic & Great West'n (First & Second Div.)	228	49	112,235 2,291	21.20	5.09 5.59 0.43	5.92 17.88	2.24 3.17		
" " (Third & Fourth Div.)	197	58	155,680 2,684	44.08	3.18 5.59 0.48	5.90 15.65	2.24 3.17		
" " (Mahoning Division).	121	58	29,080 2,418	19.20	1.05 2.24 1.19	5.33 16.81	5.37 2.00		
Camden & Atlantic.	67	12	58,800 1,580	19.00					
Central Pacific (Western Division).	173.4	41	120,701 2,944	45.26	6.29 17.65 0.76	0.68 7.9 33.31	8.00 5.25		
" " (Sacramento Division).	119.5	40	102,236 2,556	29.81	8.8 17.61 0.60	8.85 36.82	5.25		
" " (Truckee Division).	204.5	29	64,604 2,307	38.59 29.29	4.50 19.70 0.91	0.82 9.24 36.16	8.00 5.25		
" " (Humboldt Division).	236.6	23	64,158 2,789	39.02	5.29 20.48 0.77	0.56 7.76 24.86	8.00 5.25		
" " (Salt Lake Division).	182.8	25	77,928 3,117	36.99	12.27 21.61 0.89	0.48 7.46 12.70	8.00 5.25		
" " (Oregon Division).	151.48	16	22,123 2,765	10.59	7.89 12.93 0.60	0.57 7.60 29.69	8.00 5.25		
" " (Visalia Division).	231.8	16	33,941 2,103	52.58	5.34 16.21 .82	0.72 8.36 30.45	8.00 5.25		
Cleve., Col., Cin., & Ind. (Columbus Div.).	138	57	133,270 2,373	32.92 75.00	3.6 4.59 0.53	6.94 15.32	2.14 3.60		
" " (Indianapolis Div.).	207	62	148,505 2,557	52.20 56.34	4.97 3.96 0.60	6.98 16.51	1.75 3.60		
" " (Cincinnati Div.).	130	24	77,412 2,765	10.89	2.10 4.75 0.53	0.53 6.45 13.88	1.75 3.60		
Cleveland & Pittsburgh.	109	77	169,750 2,216	61.10	30.41	16.10	6.95 15.98		
Del., Lacka., & West. (Bloomsburg Div.).	80	25	65,380 2,615	28.73	3.41 .67	5.74 9.82	8.00 5.25		
Flint & Pere Marquette.	284								
Hannibal & St. Joseph.	294	53	111,270 2,104	45.20	5.80 5.59 0.40	7.00 18.70	2.50 3.00		
Illinoia Central (Chicago Div.).	262.5	62	149,189 2,446	41.77	6.77 4.65 0.30	6.78 18.53	1.80 4.25		
" " (South Div.).	230.75	29	69,337 2,391	45.99	15.67 10.06	4.26 0.34	6.68 21.31	1.80 4.25	
" " (North Div.).	216	46	163,710 2,255	36.35	16.79 13.87	0.31 6.81	6.67 19.14	1.80 4.25	
" " (Iowa Div.).	461	46	123,812 2,692	32.09	13.34 4.30 6.30	0.28	6.37 17.05	2.24 4.75	
Jeffersonville, Madison & Indianapolis.	225	43	93,138 2,146	52.57 34.87	18.96	4.13 5.66 0.41	2.35 6.81	19.34 2.65 3.00	
Kansas Pacific, Main Line, including all branches.	671	86	144,651 1,682	36.16	3.56 8.44 0.44	7.18 19.60	3.00 3.13		
Kansas City, St. Jo. & Council Bluffs.	895	94	165,158 2,178	45.47	3.34 8.91 0.43	7.33 20.01	3.11 3.32		
Lake Shore & Mich. South. (Buffalo Div.).	334	23	64,713 2,794	57.10	25.50	7.00	7.40 19.50	3.00 3.50	
" " (Erie Div.).	93	134,161	1,443 47.12	43.33 14.90	6.98 7.43		6.63 21.04	3.50 3.50	
" " (Toledo Div.).	79	132,554	1,678 41.71	48.45 12.74	5.60 6.98		6.54 19.12	3.50 4.00	
" " (Mich. South Div.).	209	393,215	1,881 49.41	60.96 20.68	4.40 9.32		6.31 20.63	4.00 4.00	
Marquette, Houghton & Ontonagon.	88	30	44,866 1,498	45.20	2.25 16.10 0.80		7.64 26.79	8.00 5.25	
Northern Central (Elmira & Canandaigua Div.).	119.9	116	272,739 2,351	40.39	11.37	5.70 14.10 1.20		21.00 0.20 2.04	
Pennsylvania (New York Division).	184.2	52	90,127 1,731	57.44	17.48	5.80 9.90 0.80		16.60 0.20 7.04	
" " (Amboy Division).	102.5	33	65,276 1,972	48.46	11.14	4.60 11.70 1.30		17.60 0.20 7.04	
" " (Belvidere Division).	128	20	44,748 2,274	46.92 36.49	2.68 10.40 0.70		13.70 0.20 3.60		
" " (West Jersey Railroad).	204.3	178	479,056 2,691	34.33	5.00 5.20 0.80		11.00 0.08 3.60		
" " (Philadelphia Division).	131.6	126	294,172 2,335	35.04	1.10 5.00 0.66		9.70 0.08 3.60		
" " (Middle Division).	119	24	269,370 2,264	37.98	8.50 4.60 0.80		18.90 0.08 3.60		
" " (Pittsburgh Division, East End).	206	24	52,052 2,169	27.94	3.11	4.10 6.30 0.50		10.90 0.08 3.60	
" " (Tyrone Division).	106.8	24	52,052 2,169	27.94	23.15	4.20 3.20 0.50		7.90 0.08 3.73	
" " (West Pennsylvania Division).	103.6	25	52,706 2,108	43.99	96.76	3.40 4.30 0.40		8.10 0.08 3.61	
" " (Lewistown Division).	12.5	2	4,034 2,017	56.32		4.20 3.20 0.50			
" " (Bedford Division).	56.5	5	10,923 2,196	38.88	90.67	1.10 4.60 0.49		6.30 0.08 3.62	
Philadelphia, Wilkes-Barre & Baltimore.	74		159,973 2,162	63.34	10.31	6.40 8.60 1.20		6.90 23.10	4.75 5.00
Pitts., Fort Wayne & Chicago (Eastern Div.).	468.9	183	399,188 2,180	44.33	17.68 14.90	3.63 3.71 0.80	1.56 6.69 16.39	1.64 1.64	
" " (Western Div.).	230	106	239,610 2,449	52.90	16.20 20.70	3.60 3.10 0.50	2.60 15.60 20.70	1.65 1.65	
Pitts., Cin. & St. Louis (Little Miami Div.).	197	38	100,179 2,626	49.31	12.93	5.20 3.39 0.95	2.47 6.78 18.73	1.50 2.75	
" " (Pitts. & Col. Div.).	224	94	234,510 2,495	39.90	15.19	6.01 4.46 0.89	2.25 6.66 20.27	1.40 4.00	
South Carolina.	242	31	60,837 1,062	54.71 27.03		7.34 4.60 0.66		12.60	2.52
Stockton & Copperopolis.	49	3	4,144 1,381	54.17 16.44		1.63 6.99 1.04	1.42 8.86 2.64		5.25
St. Louis, I. M. & South (Arkansas Div.).	305	25	69,050 2,362	59.					

Leighton Bridge & Iron Works,

ROCHESTER, N. Y.

Wrought-Iron Riveted Lattice Railroad and Highway Bridges.



A Wrought-Iron Riveted Lattice Railroad and Highway Bridge, built by the Leighton

Bros. & Son, Springfield, Mass.

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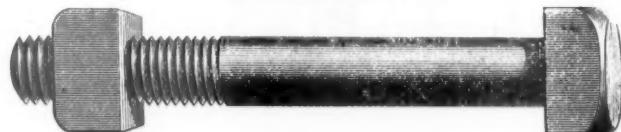
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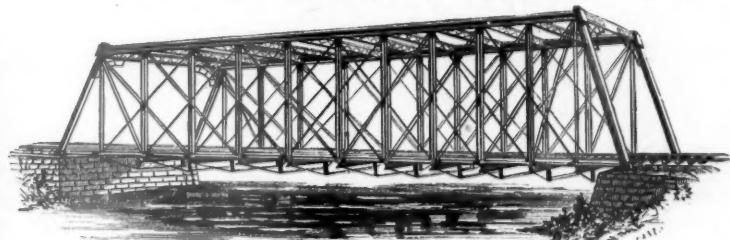
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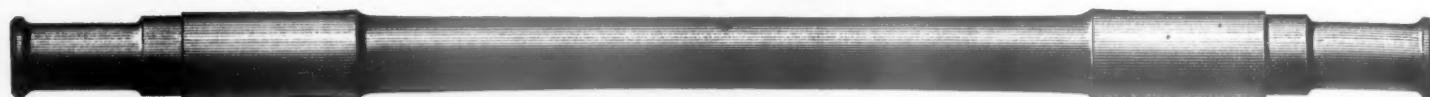
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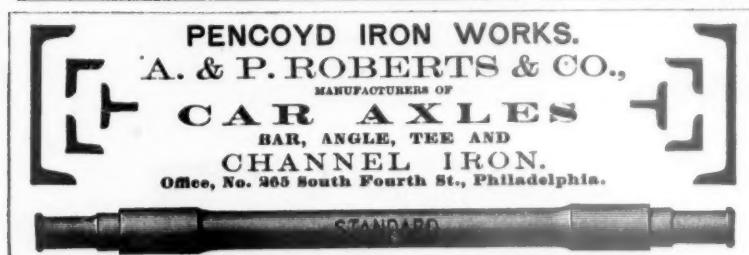
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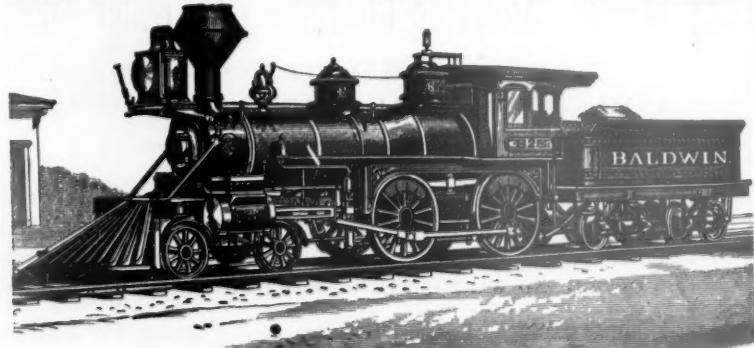


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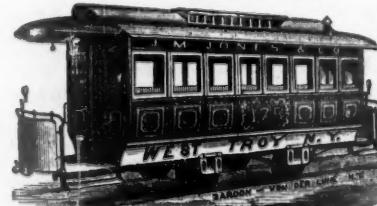


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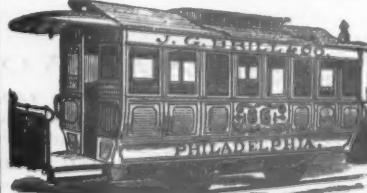
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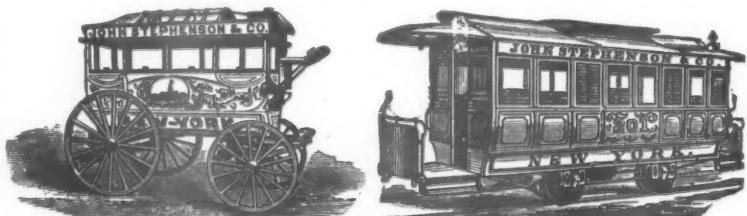
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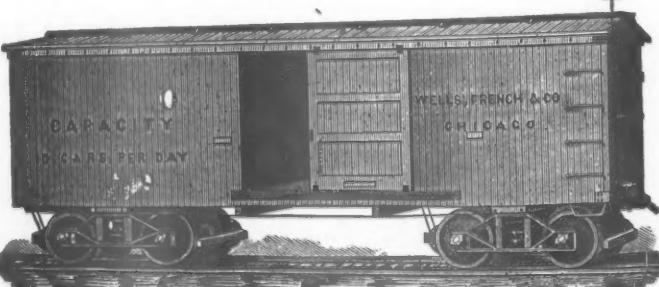
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